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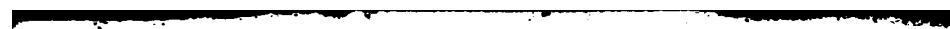
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EDITED BY THOMAS GADDES.

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JUNE, 1877, TO DECEMBER, 1877.

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THE MONTHLY REVIEW
OF
DENTAL SURGERY.

No. I.

JUNE, 1877.

VOL. VI.

The Dead Lock.

SOME popular writer (we forget his name) makes a character in one of his novels to say, "My dear, you must go out into society you know, for if you don't mix, you'll never settle."

We have certainly had an infinite amount of mixing in the Dental Profession, but the happy state of settling seems very far off at present. In fact, we have come to the conclusion, that there are some people who may be best compared to certain "incompatibles" in the pharmacopia—they will neither mix nor settle—but remain for ever in a state of suspension.

There is but one consolation for us, and that is in the fact that the law of "The survival of the fittest" applies to society, and sections of a profession, as much as to the general animal kingdom. If it were not for the know-

ledge of this absolute law, Reform would become impossible, since Reformers would grow heart sick of their labours, and despair of ever attaining that which they have in view. Conscious, however, that in the end that which is best must prevail, the work goes steadily on, and nothing can stop, though many things may hinder its progress—that which was commenced twenty years ago and has continued to make its way till now, cannot be arrested in its course.

Obstacles may arise, the stream may be diverted from its true channel for the time, but the weight and force of conviction will assuredly overcome the small hindrances of prejudice and jealousy, and in the end we shall obtain that which all desire, the solidarity of the Dental profession.

The Month.

THE ODONTOLOGICAL SOCIETY.

The past Session of the Odontological Society has certainly not suffered from a lack of papers, and the discussions that have taken place will compare favourably with those of past years. Considering the amount of political agitation that has been going in the profession this is extremely satisfactory, since it affords evidence that some portion of the profession, at any rate, is contented to pursue a course of steady progress by means of scientific work without entering into the field of party strife.

CORBYN'S SPRAY APPARATUS.

WE recently noticed Corbyn's Spray Producer; it seems, however to be capable of an infinitely greater number of uses than those to which we have already referred. It is notably of service for the application of medicated spray to the margins of the gums. Those cases where the necks of the teeth are extremely sensitive from exposure, it takes

the place of the tooth brush, and enables the patient to keep the mouth in a more healthy condition with less discomfort than would otherwise be possible. After removing tartar from the teeth, it is occasionally found difficult to pass either floss silk or thread through the inter-dental spaces, and even where it can be done pain is likely to be given, and the gum is apt to be torn. The object for which the thread is used can be attained quite as easily and much more perfectly and pleasantly by the application of the stream of scented water produced by Corbyn's apparatus. We shall be glad to see this useful little instrument universally adopted by the profession.

The following page Advertisement is re-produced from a Local Railway Time Table, published by W. G. WARREN, Hosier, Glover, &c., 80a, High Street, Peckham.

DENTAL NOTICE.

The following is a complete list of the
**QUALIFIED Dentists (DENTAL
 LICENTIATES OF THE ROYAL
 COLLEGE OF SURGEONS OF ENG.)**
 in the S. and S.E. Districts of London,
 reference for which may be made in the
 Medical as well as the ordinary London
 Directory for 1876 :—

ALLWORTH, ALFRED, Swiss House,
 Lyndhurst Road, Peckham, S.E.
COOK, A., Belvedere Road, Upper Nor-
 wood, S.
ELLIOTT, J. W., Forest Hill, S.
HOOPER, H. T., Lee Green and Wool-
 wich, S.E.
LLOYD, A., Amersham Road, New
 Cross, S.E.
MEDWIN, A. G., Montpelier Row, Black-
 heath, S.E.
MITCHELL, F. W., Clapham, S.
PARKS, W. J., Newington Crescent, New-
 ington, Butts, S.
RITSON, J. L., Dulwich Road, S.E.
WALLIS, C. J., Brunswick Place, Black-
 heath, S.E.
WALKER, G., Kennington Park Road, S.

Notwithstanding the additional pages in this number of *The Monthly Review* we are obliged to omit a considerable amount of important matter already in type.

DENTAL MATERIA MEDICA AND THERAPEUTICS.

By JAMES STOCKEN, L.D.S., R.C.S.

ASSISTANT DENTAL SURGEON TO THE NATIONAL DENTAL HOSPITAL.

*(Prepared by desire of the Medical Committee of the National Dental Hospital).**(Continued from page 518.)***NITROSUM OXIDUM.—NITROUS OXIDE.***Synonyms.*—Protoxide of nitrogen; Laughing gas.*Formula.*—Old: NO. New: N_2O .*History.*—Discovered by Dr. Priestly in 1776; he called it *Dephlogisticated Nitrous Air*; Sir H. Davy called it *Nitrous Oxide*; it is commonly called *Laughing Gas*.

Its applicability as an anæsthetic in surgery was first noticed by the late Sir J. Y. Simpson, in 1847, but it was not till twenty years afterwards that it came into general use, and then only in those cases where speedy anæsthesia was required for short operations, to which its use has been principally limited. About this time the attention of the late Horace Wells and Drs. Colton and Cotton was directed to its applicability in Dental Surgery. It was introduced by the latter to Dr. Evans, of Paris, and by him in 1868 to the Dental profession in England.

Characters.—A colourless, transparent, and almost inodorous gas, having a sweet taste. Sp. gr. 1.525. It liquifies at a pressure of 50 atmospheres at 45°F.

Preparation.—By subjecting pure Nitrate of Ammonia to a temperature of about 400°F in a retort or flask (taking care that the temperature does not exceed 480°F) Nitrous Oxide Gas is evolved; wash, and collect it over tepid water, as cold water dissolves nearly its own weight of this gas. If a higher temperature than 480°F be applied, Nitric Oxide will be given off. This may be separated by passing the gas through a solution of Sulphate of Iron (green vitriol). Sometimes the Nitrate of Ammonia contains Chloride of Ammonium, if so the Nitrous Oxide Gas will be impregnated with Chlorine. To ensure the absence of this, the gas should be passed through a solution of caustic potash, and finally through tepid water.

For ascertaining the purity of nitrate of ammonia the following simple tests may be employed. 1st. Take two grains of the salt, and dissolve it in half a drachm of distilled water in a test tube; to this solution add, drop by drop, a small quantity of one containing 4grs. of nitrate of silver

in a drachm of distilled water. A light cloud and curdy deposit will indicate the presence of chlorides. 2nd. To a similar solution of the nitrate of ammonia as above described, add a small quantity of one composed of 6grs. of chloride of barium in a drachm of distilled water. A white cloud will indicate the presence of carbonates or sulphates. These test solutions may be preserved for future use.

Physiological Effects and Therapeutics.—The pure gas, when inhaled in the ordinary way, produces exhilaration and narcotism, and this without asphyxia; but when atmospheric air is carefully excluded, it produces anæsthesia without exhilaration. The effect, however, only lasts a short time. The time required to produce anæsthesia is from 25 to 120 seconds, by from 10 to 60 inhalations, and a consumption of from 2 to 8 gallons of gas. Dr. Barnes kept a patient 10 minutes under its influence, and no unpleasant symptoms accompanied or followed its use. He has stated he would not hesitate to employ it longer if necessary. Two cases are mentioned by him where the operation lasted over an hour and a-half.—*Medical Times*, 1875. By Mr. R. Rendle it is said to be safe in all short operations, and perhaps in long ones also, provided there is due admission of air at proper intervals.

The advantages of the Protoxide of Nitrogen over other anæsthetics for minor operations are:—

1. Its safety.
2. The shorter time in which anæsthesia can be induced, viz., 25 to 120 seconds.
3. The readiness with which the patient can either be kept for a long or short period under its influence.
4. Its effects pass off quickly.
5. No danger of ignition.
6. Being pleasant to inhale, and not irritating (if pure) to the air-passages, fright and mental distress are avoided, thus diminishing the danger of death by syncope.
7. Because sickness and other unpleasant after-effects are very rare.

Conditions to be observed in its administration:—

1. When the services of an experienced administrator cannot be had, an intelligent assistant should be present—the administration and operation should never be performed single-handed. The apparatus or face piece recommended is that introduced by Mr. Clover. The patient being

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placed in a good light, and on a chair constructed for supporting the head so that it cannot easily slip. The dress, if tight, loosened.

2. The gas should be *perfectly* pure, free from all trace of chlorine and nitric oxide, and tolerably fresh.

3. The patient should not have taken food for at least two hours before the administration; at the same time it is desirable to guard against exhaustion.

4. The tube through which the inhalation takes place should be of larger diameter than the trachea, and a liberal supply of gas should be kept up. It is an advantage to have the pressure of gas in the bag slightly in excess of the atmospheric pressure; this will diminish the risk of the admission of air in consequence of any imperfection in the adjustment of the face-piece.

5. The face-piece should be most accurately adjusted, and where the face is much covered with hair the latter should be well soaped, for it is essential that air be most carefully excluded until the patient be fully under its influence.

6. The patient should be instructed to breathe deeply, regularly, and fearlessly, and to breathe out thoroughly.

7. The evidence of the full effect of the gas is shown by the blue colour of the lips, breathing becoming stertorous, and the insensitiveness of the conjunctiva.

8. Its inhalation should not be continued for a longer period than one and a-half or two minutes without the admission of air to the lungs.

In addition to the above suggestions it is advisable to maintain the most absolute quiet, both during the inhalation and recovery. The operator and administrator should be as much out of sight as convenient, and thus avoid any disturbance of the patient's mind during the period of semi-consciousness. The gag should be very carefully made and adjusted; also attached to another gag or weight (out of the mouth) by means of strong silk cord. When several teeth are to be removed at a single inhalation the operator should commence with those farthest back in the mouth and with the lower before the upper teeth; by so doing the view of the teeth to be removed is less obstructed by the bleeding from those already extracted. When the condemned teeth are extracted the head should be held forward so as to allow the blood to escape through the

mouth, but the gag should not be removed until consciousness is restored. If these conditions are observed, little fear need be apprehended.

As any interference or suspension of either the nervous, circulatory, or respiratory systems cannot be resorted to without some risk to life, it may be well to briefly consider the conditions under such circumstances.

Death arises either by coma, syncope, or asphyxia.

Coma—or deep sleep.—The arrest of the functions of the brain, caused either directly or indirectly by the injurious effects upon it of some noxious agent.

Syncope—fainting or swoon.—A sudden suspension of the heart's action, accompanied by cessation of the functions of the organs of respiration, internal and external sensation, and voluntary motion, caused either by some derangement of the circulatory system, the nervous system, or other organs of the body.

Asphyxia—or more correctly *Apnœa*—the former term meaning pulselessness, the latter breathlessness. It is this latter condition we have to do with.

1. It may be caused either by an arrest of the action of the muscles of respiration, due to exhaustion of the muscles; by the loss of nervous influence; by mechanical restraint; or by tonic spasm.

2. By a cessation of the action of the lungs, due either to division or compression of the pneumogastric division of the eighth pair of nerves; to mechanical obstructions, as admission of air, abdominal viscera, &c., into the chest by wounds.

3. Exclusion, partially or entirely, of atmospheric air from the lungs. This may arise from extreme rarification of air; mechanical exclusion, as by a foreign body in the larynx, trachea, or upper part of the œsophagus; by submersion, by suffocation, strangulation, or suspension; or the atmospheric air may be replaced by a gas which acts merely by excluding it; or, lastly, by irritant gases, producing spasm of the glottis.

When the process of respiration is stopped, either by arresting the respiratory movements, or permitting them to continue in an atmosphere deprived of uncombined oxygen, the circulation of blood through the lungs is retarded, and at length stopped; there is circulation of venous blood to the brain and body, and consequent im-

pairment of their functions. The effect of the impaired pulmonary circulation is an obstruction to the exit of blood from the right ventricle; this is followed by delay in the return of venous blood to the heart, and to this succeeds venous congestion of the medulla oblongata and the nervous centres. Hence slowness and disorder of the respiratory movements, and consequently of the cardiac movements. Under these combined conditions the heart at length ceases to act; as already implied, the cessation of its action being in a great measure brought about by the imperfect supply of oxygenated blood to its muscular tissue.

To the accumulation of carbonic acid in quantities too large to be eliminated by the secreting apparatus of the lungs, and the consequent turgescence of the capillary vessels, must in the first place be ascribed the phenomena of asphyxia.

The administrator of this anæsthetic should have special regard to the respiration, the eye, and the countenance.

When asphyxia results from the administration of anæsthetic agents, such efforts should be made for resuscitation as the following. The main reliance is on artificial respiration; this should be resorted to without a moment being lost. The action of the heart usually continues for three or four minutes after respiration had ceased; these are the precious minutes. There are two methods whereby to effect artificial respiration. The Marshall Hall method is as follows:—

Having drawn forward the patient's tongue (either with forceps or a tenaculum), lie the patient on the face, with the right arm doubled under the forehead so as to prevent obstruction to the mouth, then turn the body gently, and completely, on the side and a little beyond, alternately repeating these measures deliberately, efficiently, and perseveringly, fifteen or twenty times in a minute. When the patient reposes on the thorax, this cavity is compressed by the weight of the body, and expiration takes place; when he is turned on the side this pressure is removed, and inspiration occurs. When the prone position is resumed, make equable but efficient pressure along the spine, removing it immediately before rotation on the side (the first measure augments the expiration, the second commences inspiration).

The other method of producing artificial respiration is known as Sylvester's. It consists in lying the patient on his back, drawing the tongue forward, then carrying the arms slowly upward over the head, thus elevating the ribs by means of the pectoral muscles, and inducing inspiration; the arms are then brought down to the side of the chest, and slightly compressed against it; these movements are to be repeated slowly, as in the other method.

Though the main reliance is on artificial respiration, fresh air should be admitted by the door, window, or fan; stimulating applications applied to the surface, and cold water to the face and head. If a galvanic battery be at hand, it should be resorted to among other possible means of restoring animation, applying the positive pole of the battery to the back of the neck, and the negative pole to the end of the breast-bone, breaking and renewing the current about fifteen times per minute.

As soon as the patient can swallow, give brandy and ammonia. Efforts at resuscitation should not cease until death is evidently beyond all question.

Introduction to the Course of Lectures on the Elements of Histology.

Delivered at the National Dental College on the 6th inst.,

By THOMAS GADDES, L.D.S., R.C.S.,

LECTURER ALSO ON DENTAL ANATOMY AND PHYSIOLOGY. ASSISTANT DENTAL SURGEON TO THE NATIONAL DENTAL HOSPITAL.

THE objective material which we perceive around us is, as a whole, termed the world. It is divided into inorganic and organic substances. The organic substances, or beings, are primarily divided into two kingdoms—the animal kingdom and the vegetable kingdom. The animal kingdom is further divided into four sub-kingdoms, the radiata, articulata, mollusca, and vertebrata. Then the animals which are classified in each of those sub-kingdoms are arranged in classes, orders, families, genera, species, and varieties. Each individual animal is made up of a number of distinct parts or organs, and of organized structures, such as tissues, proximate principles, and anatomical cell-elements.

The inorganic substances, into which all organic struc-

tures are finally resolved, are ultimately divided somewhat arbitrarily into gaseous, or non-metallic elements, and metallic elements. Two or more elements may combine and form a compound. The smallest divisible particle of a compound is termed a molecule; and a molecule consists of a group of atoms of elementary substances. Thus we may say a mountain is made up synthetically of atoms, molecules, and masses. And in a similar manner is the body of a complex animal made up of anatomical elements, tissues, organs, systems, and apparatuses.

The study of organized structures includes several branches of natural science. But the particular phenomena which in this course of lectures I desire to investigate with you are included in that division of natural science termed Biology.

Anatomy teaches that the body is made up of different parts as apparatuses, systems, organs, and tissues. Microscopic anatomy, or histology, teaches the minute structure and development of the tissues and anatomical elements; while physiology teaches the uses and functions of the parts which anatomy and histology reveal.

Histology is our subject. I have endeavoured to briefly indicate the relation histology has to some of its concomitant branches of biology; and also that similar modes of inquiry attain to the investigation of the organic and inorganic phenomena of the material world. Organized matter is in two conditions—in a living state and in a non-living state—and between these conditions there is an absolute and irreconcilable difference.

The conditions through which organic matter passes are the essential phenomena of birth, growth, development and death.

Every animal, and every living microscopic germ begins its life as a minute spherical particle, which consists of colourless, transparent, semi-fluid matter, capable of moving in every part, and in all directions. Each minute particle was derived, or had its birth, from matter like it, which existed before it. All living forms of life are lineal descendants of those which have lived. If we carry out this thought of parental derivation, coupled with the great theory of universal evolution, we come to the most primitive being, the alpha of organic life: yea, carry to the end the analytic inferences wrought out by that

couplet and its correlative dissolution, and we are led through the geological epoch, and the astronomical period of nebulae, to the Great First Cause. But without venturing upon the fundamental hypotheses of that ultimate induction, we stop at the alpha of organic life. And at this shrine, the veil of the temple of Bios, which is not yet rent to man, most great minds bend the knee, and acknowledge the Great Creator. All evidence teaches us that from the first beginning of life living matter has proceeded from living matter, and only from living matter.

Growth, or the innate power of increasing in size, is essential to life, but is not characteristic of living organisms. Crystalline masses of inorganic matter grow by the additions upon the outside of that which has formed; new matter is laid on particle by particle, and layer upon layer. The growth in such cases is said to be superficial. In a living structure on the other hand, growth takes place not upon the surface only, but throughout every part of the mass, and the growth is thus interstitial. Again, in the growth of a lifeless mass there is no difference in the composition or properties of the material which is taken up and added to the previously existing mass. The analysis of one molecule gives the composition of the mass. But in organic structures the materials taken up are much altered before they are finally appropriated; and the analysis of one group of anatomical elements does not give the composition of the whole being. Heterogenity of structure is the leading distinction between organic and inorganic aggregates, as well as between the more highly organized and the more lowly organized. The magnitude of inorganic masses is entirely indeterminate, being altogether dependent upon the number of particles which can be brought together; while the size of an organised structure is restrained within tolerably definite limits, which may, nevertheless, vary to some degree among individuals.

Development is a constant concomitant of life. As it proceeds, the original mass of simple living matter gives rise by growth and subdivision to multitudes of descendants, which succeed one another in regular order, until at last a number of masses of living matter result. These take part in the formation of tissues differing remarkably from one another in properties, and of organs which perform very

different kinds of work, duty, or function. No such differentiation takes place in inorganic matter. In this illustration of development I have included the almost universal, but not individually essential law of reproduction. Reproduction is inseparably linked with development, inasmuch as a tissue or an organ is increased in size and matured, not only by the perfect development of the individual masses of living matter, but also, and to a great extent, by the proliferation, birth, or reproduction of an increasing number of fresh particles of living matter, which in their turn attain maturity, propagate their kind, and die.

Of the phenomena of systemic death, philosophers of all times have given various explanations and definitions. To give a *résumé* of those theories, or even to treat of systemic death, is not within the sphere of my present subject. But it may not be without interest if I quote one or two of our well known contemporaries who have written upon the subject. And perhaps the illustrations which I shall give of the minute phenomena of individual or local death will afford you means of better comprehending such terse sayings as those I quote. Thomas Carlyle in a purely philosophical strain has written, "Death and Birth are the vesper and matin bells that summons mankind to sleep and to rise refreshed for new advancements." . . . "Know of a truth that only the time shadows have perished, or are perishable; that the real Being of whatever was, and whatever is, and whatever will be is now and for ever—believe it thou must, understand it thou canst not."

To come nearer our immediate subject—physiological death and local death—G. H. Lewis says, "Death is the destruction of the organic unity, and consequently of the phenomena which were dependent on that unity." We have seen that living matter is characterised by the exclusive property of being capable of moving in every part, and in all directions. By the inherent power of the living matter is every form of tissue and most secretion elaborated. The living matter becomes transformed into such materials, and these materials result from the death of the living matter or bioplasm.

Beginning with the fecundated primitive germ—the primordial utricle,—associated with the very act of its development is the formation of cell walls upon the cells of the blastoderm, and this is consequent upon the death of

the living matter. Every action and every thought of man is a consequence of living matter ceasing to be living matter—ceasing to possess the properties characteristic of living matter. The change from the living state to the non-living state is sudden and complete. This is *local* death. The very genesis of the life of a complex being is associated with local death. That of an animal which we see with the unaided eye—the visual reality—is the result of this death.

Herbert Spencer says, "Life is the definite combination of heterogeneous changes, both simultaneous and successive." This definition of life he yet reduces to a still more abstract shape, and "the broadest and most complete definition of life will be—*The continuous adjustment of internal relations to external relations.*" As the life of an unity, anatomical cell-element, or individual mass is dependent upon the vital integrity of the living matter, so is the life of a complex being the totality of force or vital principle of its individual parts—the dynamic condition of each organism. And so the death of a **part**, or of the whole, of a microscopic individual cell may be said to be the cessation of the **fundamental** vital phenomena; and the death of an **organ**, a **system**, or a complex being, is the destruction of the organic unity, and consequently of the **complex** phenomena dependent upon that unity.

When the functions of respiration and circulation absolutely cease, an animal assumes the condition ordinarily termed death. The cessation of such vital actions is named *general* or *systemic* death. But for some time after this takes place the muscles of the animal can be caused to contract by the application of a stimulus. The muscle thus retains its "vital property" of contractility. After a time the muscle does not respond to the amount of stimulus originally applied, but does so under the influence of a greater amount. Finally, some hours or days after the systemic death of the animal, the vital properties of the tissues vanish, and *physiological* death takes place. All living matter must die. Once dead, it is resolved into other things because it cannot again live. There is no such thing scientifically conceivable as living matter dying and reliving.

Inorganic matter does not exhibit any such phenomenon as death. A rock may become disintegrated, but its particles remain the same. The chemical affinity between

the atoms and molecules of each particle is not necessarily interfered with. It is only the cohesion of the integral—whole—particles that is overcome. A crystal may be dissolved, and new crystals will be formed.

Such are the essential phenomena through which organic matter passes.

I think the foregoing considerations will now permit me to say that the characteristic phenomena of all living forms are—the power of spontaneous motion, of preservation of the individuality, and of propagation. These characteristics of living forms are termed “vital properties.” These vital properties are the result of “vital force.” Not that vital force is a distinct force or principle, but the term is a convenient and concise expression of the cause of vital action. Vital force is correlated with the physical forces, for “whatever amount of power an organism expends in any shape, is the correlative and equivalent of a power that was taken into it from without;” and vital action is a manifestation of physical force acting upon matter under conditions special to the living economy—the *specific*, mutable relations of organism and medium. “Were there no changes in the (medium or) environment but such as the organism had adapted changes to meet; and were it never to fail in the efficiency with which it met them; there would be eternal existence and universal knowledge.” This philosophy of Herbert Spencer subjectively carries us through that beatific state which follows the metempsychosis, and which thought in some form or other has pervaded the minds of men from the earliest ages of society, I say it carries us to the land of the infinite—the very elysium. But this is a somewhat emotional divergence.

We know that the various natural phenomena, sometimes called physical forces—heat, light, and electricity—are inter-convertible, and also that they are vital stimuli. Many simple organisms, and some elementary units (called *chromatophores*) of simple and complex beings, are stimulated to movement by light and electricity; that many organic infusions, previously dormant, teem with life when subjected to the influence of light and a moderate degree of heat above freezing point. So that force or principle—the unknowable—which acts upon matter to produce heat, light, electricity,

and other modes of force, also acts directly or indirectly upon matter under certain relations, and produces the phenomena of life. What those relations are we know not, neither have we yet designedly nor accidentally imitated them. And here I would add, though reservedly, "how utterly beyond, not only human knowledge, but human conception, is the universal power of which nature, and life, and thought, are manifestations."

Matter which does not possess some or all of these characteristics must be dead, but yet not necessarily inorganic matter. I make this qualifying remark because the power of propagation is only apparent in living forms during a certain part of their existence. So persistent is the specific fundamental phenomena of propagation, that the nucleus, or germinal vesicle of the ova of the human female has been observed at so early a period as the tenth or eleventh week of embryonic life; and on the fourth or fifth day after fecundation of a hen's egg, rudiments of young eggs can be detected in the developing chick.

I here cannot but yield to a digressive temptation, prompted by a worship of a hero mind, and again allude to the writings of Herbert Spencer.

He is instancing the remote future, when not a vestige of us remains, save a pile of our school books, or some college examination papers, when an antiquary of the period would, on finding them, soliloquise:—

"This must have been the curriculum for their celibates. I perceive here an elaborate preparation for many things; especially for reading the books of extinct nations and of co-existing nations (from which, indeed, it seems clear that these people had very little worth reading in their own tongue); but I find no reference whatever to the bringing up of children. They could not have been so absurd as to omit all training for this gravest of responsibilities. Evidently, then, this was the school course of one of their monastic orders."

"Consider the young mother and her nursery legislation. But a few years ago she was at school, when her memory was crammed with words, and names, and dates, and her reflective faculties scarcely in the slightest degree exercised—when not one idea was given her respecting the methods of dealing with the opening mind of child-

hood; and when her discipline did not in the least fit her for thinking out methods of her own. The intervening years have been passed in practising music, in fancy work, in novel reading, and in party-going: no thought having yet been given to the grave responsibilities of maternity; and scarcely any of that solid mental culture obtained which would be some preparation for such responsibilities. And now see her with an unfolding human character committed to her charge—see her profoundly ignorant of the phenomena with which she has to deal, undertaking to do that which can be done but imperfectly even with the aid of the profoundest knowledge. She knows nothing about the nature of the emotions, their order of evolution, their functions, or where use ends and abuse begins. She is under the impression that some of the feelings are wholly bad, which is not true of any one of them; and that others are good, however far they may be carried, which is not true of any one of them."

In speaking of living matter, and of its product—dead matter—I shall use respectively the terms adopted by Lionel Beale, of bioplasm and formed material. Regarding these terms I think it necessary to give some explanation of their meaning, as they pertain to "living" matter, to "dead" matter, and to protoplasm. By bioplasm is meant the living, active, germinal matter, possessing the faculties of appropriating pabulum or cell food, and of propagating its kind. Formed material is the substance elaborated by the bioplasm, which may be tissue, as a muscular or connective fibre, or as intercellular substance, fluid, or actual secretion. Formed material cannot appropriate pabulum, nor yet can it propagate its kind, and in this sense it is dead, though it may possess the vital property of contractility, as does a muscular fibre. Muscular fibre cannot be formed from muscular fibre, but only from bioplasm of muscular fibre. Saliva cannot be formed from saliva, but only from the bro-plasts of the acini of the salivary glands. The term protoplasm at one time included matter in the living and dead conditions, as I have just defined them, and it was the desire of Dr. Beale to distinctly express those two absolute conditions when he used the terms (germinal matter or) bioplasm and formed material. Since their introduction the former meaning of the word protoplasm

has become modified, and in most works published since 1870 protoplasm is used as synonymous with bioplasm.

After these prefatory remarks, I shall at once proceed to the study of the tissues in the following order:—Cells, Blood, Epithelium, Connective tissue, Cartilage, Bone, Muscle, Blood-vessels, Mucous Membrane, Skin, Glands, Secretion, Absorption.

(Cells having received some consideration, as regards structure, cell-wall, function, multiplication, and the part played by the nucleus in that process, Mr. GADDES concluded):—

In this lecture, gentlemen, I have touched upon subjects of the greatest importance; yea, upon a subject the most transporting, verily, the most transcendent, in the whole range of natural science—permit me to say of all thought: I would that it were opportune, and that I were able, to further investigate with you the laws of matter and motion causing the organic phenomena of life. The truths elucidated by that study, which are frequently arrived at by the most complex psychological processes, are, as it were, stimulating nectar to further inquiry—restrained, alas! by our finiteness.

Though Mr. Darwin says “we may look with some confidence to a secure future of great length,” I would impress upon you not to let go from your minds the grand hypotheses of evolution and dissolution, and, let me objectively say, their bearing on the history of the earth and the inhabitants thereof. Though we do not know the whole genealogy of life; though much of our being and environment is involved in mystery; yet, as the totalities of experience become aggregated into an indubitably ascending and a higher knowledge; as the human mind attains, as it indubitably has attained, to a more highly complex consciousness; I would unreservedly conclude, so is it a reasonable and logical inference, that that which is now unknowable, that that which we cannot now comprehend, will proportionately become comprehensible and knowable.

On Irregular and Defective Tooth Development.

(READ BEFORE THE ODONTOLOGICAL SOCIETY, MAY, 1877),

By HENRY MOON, M.R.C.S., L.D.S.

MR. PRESIDENT AND GENTLEMEN,—The subject that comes before us this evening has received attention from such able investigators that it has become difficult to say anything new about it that is also true. On this account I should have brought under the notice of this Society, through "Casual Communications," some interesting specimens that I have here, had it not seemed to me that, though a paper might contain no novelties, yet, by inviting discussion, and perhaps by leading to concerted observation among us, it might serve to more clearly establish some truths, and clear up some doubtful points in Odontology.

Under the title of "Irregular and Defective Tooth-formation" I propose to consider two classes of cases, each of practical interest from a surgical or medical point of view. Under the one class I will range and glance at those cases in which excessive or erratic development has resulted in either the formation of supernumerary teeth, or in the abnormal development known as Odontomes; and under the second class those vagaries of tooth-formation which result in deficient size, or defective form, of any of the normal series of teeth.

It has appeared to me that these dental irregularities of excess and defect might have light thrown on them by being considered together with what may be called the normal architecture of the teeth.

The fact that the crowns of human teeth are formed around a single dentinal system, seems to have prevented the full recognition of this, I believe, other fact, viz., that the variety of form in the several classes of teeth (fitting them for the office which they have respectively to perform) is due to a multiplication and modification of a simple and elementary tooth-form. These elementary forms appear to *re-assert their autonomy* under disturbed conditions of development. One of these denticles is shown to us separate in the most common and simple supernumeraries, consisting of conical crown and tap-root. (Pl. IV., figs. 1 and 1A.)

Viewing the labial surface of unworn well-formed upper front teeth in man, we see in the Incisor,—by the three

tubercles on its cutting edge, and sometimes by two vertical lines or slight depressions on its face,—that three lobes or columns of equal size go to build it up; while on looking at the Canine we see the central lobe of its labial surface magnified, while the side ones are reduced. On the lingual surface of the incisors sometimes a central cusp, sometimes two side cusps, are more pronounced.

The form of the bicuspid shows the more even development of the lobes on its buccal and lingual aspects, while the molars (speaking very broadly) duplicate the premolars.

I might point to comparative dental anatomy to support the theory of a tendency to the separate development of denticles before they blend, *e.g.*, to the distinct plates in the molars of the capybara—to the molars of the elephant, with its transverse plates of dentine (which are probably each built up of many denticles, giving to it, by their conical points, its mamillated character), and which plates remain distinct for a time, but unite to form a common pulp-cavity; and also to the molar of the mastodon, transitional as this is in character, towards the elephant's molar, as pointed out by Mr. Charles Tomes, in his recent work on "Dental Anatomy." However, confining our attention to human teeth, the cases which we shall consider will, I think, show that the prominent points of the dentinal pulp first to be capped with dentine are liable to individual modifications as to form; while the fact that partially distinct denticles sometimes group themselves as the lobes are seen to be arranged in a normal tooth, gives a significance to such arrangement, and, at the same time, points to a source of derivation for denticles which are developed separately. A fact which I observed a week or two ago will enable any one to easily satisfy himself as to the architectural nature of the incisor.

In the case of patients who possess transparent enamel, it will be found easy to see by transmitted light the outline of the dentine within. In some cases (and in the first case I noticed it was strikingly marked) the dentine of ivory-like colour showed through the pearl-like enamel in three separate circular-topped columns, which remained distinct for some little distance; in a second case, where, in place of the central tubercle of enamel, two smaller tubercles were present, I could distinctly see the corresponding

division in the points of dentine. In others, the cutting edge of dentine presented an unserrated line. Individual denticles vary greatly in size, and under unusual conditions of growth would naturally be particularly prone to erratic development. To these causes I should be inclined to refer the eccentricities in form of supernumerary teeth, and of some odontomes.

A remarkable case, reported and figured in Tomes' "Dental Surgery," tends, I think, strongly to support the view I have advanced. A cyst containing twenty-eight or more separate dental formations (some of which were single denticles, while others consisted of an aggregation of these elementary forms) occupied the place of the absent canine, bicuspid, and molar. Some specimens of erratic and excessive dental development I have had here figured (Pl. IV.), that I may direct your attention to them *seriatim* as illustrations of my remarks.

As, however, I find that my paper would extend to most inordinate length if I entered on the discussion of these specimens generally, I will only refer to those that bear on the question of individual denticular development, and leave the consideration of odontomes for another occasion, which I hope may be provided by my friend, Mr. Charles Tomes, giving us the results of his investigations into the nature of a radicular odontome, of which he has recently made a section.

Plate IV. Fig 1 represents the simplest and common form of supernumerary; in fact, a denticle or most elementary tooth-formation. The enamel in such a conical tooth ceases all round the neck at an equal distance from the apex of the crown; in other words, by a line free from undulations.

Fig 1A is a smaller denticle of the simplest form.

Fig. 2 (taken from Specimen No. 374 in the museum of the Society) shows an enamel nodule attached to a molar at the point corresponding to the bifurcation of its roots. Mr. Salter has ranked such a nodule among odontomes, and has shown that it consists of enamel thickly capping a cone of dentine, and is, in reality, a submerged cusp, which to my mind means a denticle developed in an unusual situation, perhaps to be explained by the mutual attraction which enamel and dentine seem to have for one another.

Fig. 3 represents another specimen from the museum

(No. 373). In this, apparently, a large cusp of a supernumerary tooth is attached to a molar, at the neck of the latter. The frequency of the occurrence of this junction at the neck of the tooth, or at the bifurcation of the roots, suggests that a cessation of the tooth-sac, as such, at this point, has something to do with such localization.

Fig. 4, also taken from a specimen in the museum, shows a small supernumerary tooth or denticle attached to, and doubtless blended with a molar.

This germination of teeth involves a commingling of the dentine of the united teeth; and, looking at this specimen, at the two last-mentioned, and at the next to be noticed, it seems hard to draw a line between them, and to say one is an odontome and the others are germinated teeth: the same remarks may possibly apply to some of the projecting masses which have been called coronary odontomes.

Fig. 5 represents a lower wisdom, with two supernumerary teeth of true bicuspid form blended with it. It was extracted under chloroform by me, at Guy's, from a man who was suffering from chronic spasm of the masseter, and from local suppurative inflammation set up by this triplet's presence, and its ineffectual attempts at complete eruption. This man had the largest teeth I have ever seen; he was not particularly hirsute. The specimen tells its own formative history.

Fig. 6 shows a two-cusped supernumerary that blends with the lower part of the crown of an upper molar, and then, bending on itself, develops its root in a bold outward curve. Instances of the development and perfect blending of an extra half-cusp on the buccal and lingual surfaces of upper molars are familiar to us all, and also, probably, the flattened form of the small separated Supernumerary sometimes found in these positions. (Specimens shown.) Supplemental teeth, undistinguishable from the normal incisors and canines, are, as we know, developed in the front of the mouth sometimes, and a pair of teeth, called cubic, occasionally behind the incisors.

Fig. 7.—The characteristic difference of these so-called cubic teeth from the normal incisors is seen to be a flattening of the labial surface, together with the greater vertical development of the lingual lobes, approximating the masticatory surface to that of a bicuspid, and, remarkably enough, we sometimes find in them a greater

development of the central lingual denticle or cusp, and sometimes of the two lateral ones; thus increasing the likeness, in the one case, to a first, and in the other, to a second lower pre-molar. The breaking up of these teeth into their elementary forms may account for the numerous separate supernumeraries of simpler form occasionally met with in the incisive region. (Model shown of a case.)

Fig. 7a.—A temporary tooth extracted by myself, showing the T form noticed by Mr. Tomes in writing of the various forms that supernumeraries take, its peculiar form being the result of the abnormal development of its lingual central cusp.

Figs. 8 and 9 are from specimens kindly lent me by my friend Mr. Pedley, of Guy's. They were extracted by Mr. Pedley, senior, and held the place of upper central incisors. The separate denticles forming the crown are in both specimens bundled together without any traceable order, and in one specimen the compound root has spread out into a radicular odontome.

Fig. 10 represents in vertical section a radicular odontome of the simplest kind, produced by a general axial dilatation of the pulp of the root. This case, I believe, a unique one, is exactly described by the name of "hypertrophied dilated tooth-fang." An uncalcified pulp occupied the largely-expanded pulp-chamber, which terminated in a very large foramen, protected by a cowl-like projection. The case has been reported by Mr. Salter in the Guy's Hospital Reports for 1876, and I will only very briefly touch on its main features. The Boy, æt. 11, from whose mouth the tooth was removed, came into Guy's under the care of Mr. Bryant. He had for about three years noticed a swelling in the front of the upper jaw, but had suffered no pain from it. The tumour figured in Plate V., fig. 1, was red, soft, and had a slight tendency to bleed. It looked like an epulis; the downward projection of the left central incisor and its separation from the lateral, being however, marked features. The form of the crown of the central incisor led me to suspect inherited syphilis, and though no history of it could be obtained from the parents, and the boy presented no other sign, his elder sister had become deaf, and had suffered in sight from inflammation of syphilitic origin.

Before leaving this part of our subject, I would say that

perhaps some light may be thrown upon the formation and direction of normal tooth-roots by the theory of tooth architecture advanced, while the singleness of the roots of compound supernumeraries may be partly explained by the fact that they are intruders in the jaw, and, consequently, have stunted accommodation for their implantation.

Figs. 11 and 11a.—The tendency of the dentine and its pulp to break up into smaller dentinal systems under disturbed conditions of development may help to explain also the structure of coronary odontomes. The two small odontomes here figured, represent a lateral incisor and a canine, and gave rise to two distinct dentigerous cysts. They were extracted by Mr. Cooper Forster, at Guy's, from the mouth of a girl *æt.* 13, and were found by Mr. Salter to consist of enamel dipping down between dentine, as figured by Heider & Wedl in their Atlas.

We now pass to the consideration of some cases in which the teeth present great peculiarity of form, produced by a remarkable development of the central cusp or denticle, and a diminution or suppression of the others.

At the end of last year, my friend Mr. Bell (our late house-surgeon at the Dental Hospital) brought to my notice the case of the child Emma W., *æt.* 11, a model of whose teeth, taken at that time by Mr. Bell, I hand to you. This child, one of eleven, is of fair complexion; her hair short, fine, and scanty, used to come out. Her eyes, of grey colour, and remarkably small, and the sight of the left eye has been defective from birth. Mr. Hutchinson, who has kindly examined her eyes, will, I hope, tell us what defect he found in them. These more recent models, taken after the lapse of several months (*Pl. V.*, *fig. 2*), show an elongation of the central incisors, making their hooked character more apparent. Being informed that the eldest sister of this child had also peculiar teeth, I paid a visit to her mother's house at Harrow, and the following are some of the facts in the family history:—The father, at the age of 36, died last year, it is supposed of consumption. The mother, a tall, good-looking woman, whose remaining teeth (she had lost a good many) show no peculiarity, believes that her late husband's incisor teeth were pointed, and that he only had two upper incisors. Of the eleven children, two have recently died, apparently from phthisis.

The eldest of the family, Ruth W., æt. 15, a well-grown, rather good-looking girl, bears in general features a strong likeness to her sister Emma; her complexion is fair; the hair on the scalp is short and rather scanty, but very fine fair hairs are developed on temples and cheeks in more than usual number. Her eyes, of grey colour, used to become bloodshot. The models of her teeth are here (see figs. 3 and 3A. Pl. V.). She has only changed one lower tooth, an incisor. It will be noticed also that the temporary molars are being succeeded by pre-molars in form of a simple (curved) cone. Her central upper incisors had the middle cusp considerably prolonged, but just before my seeing her, she had filed it down to a level with the one on the mesial side.

Great dissimilarity exists among the children of this family. The eldest boy, who takes after his mother, is a dark, handsome lad, with a remarkably well-developed set of teeth.

Another sister, Alice, æt. 10, a very small child for her age, is not so fair as, and does not strongly resemble, her elder sisters. As will be seen in this model (model shown) her upper permanent central incisors are slightly abnormal, the central tubercle being represented by two small tubercles, which project beyond the level of the lateral ones. Her temporary upper incisors were pointed; her left eye (the lids, I am not sure about the pupil) is at least a third smaller than the right one, which is small also; her eyes are weak.

On seeing the teeth of these children I was struck with their similarity to those of a boy whom I had seen, between six and seven years ago, at the Islington Dispensary. This is the model of his upper jaw, taken by my friend Mr. Scully, and the following were my notes taken at the time:—"Thomas B., æt. two years and nine months, an undersized child. Is he the subject of constitutional syphilis? Is hydrocephalic. Fontanelles but just closed. Hair absent for first year. Cut incisors at ten months of age, and molars appeared six weeks back. No teeth or signs of them in lower jaw. *Family History*:—Mother has been married five or six years. Had first child ten months after marriage. It had the same constitutional taint, was hydrocephalic, and died at sixteen months of age, without teeth.

I have lately succeeded in finding this boy again, and the further facts obtained relative to him and his family are of interest.

Thomas B. had no toe or finger nails at birth. In infancy had snuffles (?), or sniffed in the same way as at present, and was sometimes nearly suffocated. When nine months old he had eczema (?) on scalp, and abscesses at back of head. He has twichings of facial muscles, and has been threatened with chorea. Mother and neighbours say that he suffered intensely from hot weather, that he does not perspire (another canine characteristic), and that veins stand out on the temples of his hydrocephalic head alarmingly. He has now on scalp more hair of light chestnut colour, but it is still scanty. No eyebrows, very small eyelashes, and small eyes. (A hard growth—a node—the size of a small cherry, is to be felt at the junction of one of his ribs with its cartilage.) He is now nine years and two months old, and is small for his age. As will be seen by these models (models shown), he has cut four temporary canines, has changed his upper central incisors for two longer, and yet more recurved and pointed teeth, and his only two molars, which are upper temporary ones, have their more prominent cusps long, pointed, and hooked. (See fig. 4, Pl. V.)

Family History:—The father is said to be a healthy man, and to have good teeth. The mother, a small pale woman, with dark brown hair, has her left upper lateral incisor somewhat peculiarly shaped, and conical, has never had right upper lateral; she says, to all appearance truthfully, that she has never had first lower molars, no second bicuspid in either jaw, nor wisdom teeth.

The next child to Thomas, a pretty, dark little girl of eight, has conical lower central incisors, while her one erupted permanent upper central incisor is normal in shape, but has the three tubercles on its cutting edge particularly strongly marked. The next child, a boy, died at sixteen months, and was said to have teeth and hair normal. The next, a boy, was still-born. The next, a girl eighteen months old, has teeth normal, and hair curly and plentiful.

In the case just related, the peculiarity of tooth-form appears referable to a lowered degree in the scale of development, which is shared in by the other dermal appendages. If further investigations as to the cause of

these malformations in the case of Thomas B. go to show that they are not in any way due to syphilis, a noteworthy fact appears for diagnostic purposes; for in comparing these teeth with such as are more or less pointed through inherited syphilis, it is seen that in the teeth we have been considering the central cusps of the incisors and the prominent cusps of the molars are more pronounced than usual, while in the syphilitic tooth (about to be noticed) we find the exactly opposite condition to prevail.

We now pass to the consideration of the peculiarity in the form of the teeth which is indicative of inherited syphilis, and also to the consideration of the causes which induce the honeycombed condition of tooth-enamel.

It is now about twenty years since Mr. Hutchinson (in papers read before the Pathological Society and before this Society) published his views on the influence exerted by inherited syphilis upon the teeth. Knowing how many able men, who certainly are not accustomed to accept theories in pathology without investigating them, consider Mr. Hutchinson's views, in the main, as established beyond cavil, it was with considerable surprise that I read last year, in a report of a discussion which took place elsewhere (under your presidentship, Sir), that several gentlemen expressed doubts as to the diagnostic value of the tooth-malformation in question. My observations on this subject extend over some twelve years, and include some hundred cases; and although in some details as to the manner of causation I may differ from the view published by Mr. Hutchinson (before knowledge on tooth-development was advanced as it is at present), yet I must coincide entirely with his general conclusions, and greatly admire the manner in which they were formed from carefully accumulated evidence, gathered, as few could gather it, from exact knowledge of special branches of surgery.

Mr. Coleman, who worked with Mr. Hutchinson in his original investigations, and who, from his connection with a large hospital, had had abundant opportunities of verifying his original opinions, said, on the occasion referred to, that he believed these peculiarly formed teeth were almost invariably connected with syphilis, "though he fancied he had seen one or two exceptions, viz., in families where the elder children presented no symptoms of the disease at all, whilst the third or fourth child showed

the typical teeth, and those subsequently born presented no sign of the specific disease." With regard to these doubts, it might be that the elder children were born before their parent contracted syphilis, and that before the birth of the younger ones the disease had expended itself, or, all events, was in abeyance.

The following instructive case bearing on this point was met with by me at Guy's. These models of it (see fig. 5, Pl. V.) show one upper central incisor to be perfectly well-formed, the other to be a typical syphilitic tooth; the first molars to be characteristically affected, and the lower incisors narrowed, and showing evidence of obliterated notching. The notes of the case, taken at the time, are as follows:—

"Charles L. S., æt. 16; white. pasty complexion; depressed bridge of nose, had snuffles in infancy, corneitis five months ago. *Family history*:—Six brothers and sisters; next brother, æt., 14, has same complexion as Charles, has no bridge to nose, and suffers from headaches, for which he is attending at Guy's. His teeth are perfect in form. The next brother, æt., 11, has marked syphilitic teeth."

In the discussion alluded to, one surgeon—a high authority on syphilis—is reported to have used words to the effect, that because syphilis produced many symptoms that were also produced by other causes, therefore teeth showing this particular defect could not be held as diagnostic of syphilis.

Now the question really is this—Is there one peculiar conformation of the teeth due to inherited syphilis and not produced by any other cause? The evidence in favour of an affirmative answer to this question appears to me so strong that I think the onus of disproof rests with the sceptics. A doubt as to the diagnostic value of these teeth can only be raised by the bringing forward of cases, or the models of cases (showing the typical syphilitic teeth), accompanied by conclusive evidence of the non-inheritance of syphilis.

I believe that, to a great extent, the doubts which exist on the subject are due to a vagueness of knowledge as to what typical syphilitic teeth are like, and to their being confused with teeth which simply show a defect in enamel, whether produced by mercury or otherwise.

A grave responsibility rests with any one who acts on a

half-knowledge on this matter, as mistrust may be unjustifiably sown in families by unwarrantable inquiries; and patients likewise may benefit or suffer in proportion to the thorough knowledge of it possessed by their medical adviser.

A careful study of the plates Mr. Hutchinson has published, or the study of the mouths of patients who have undoubtedly inherited syphilis, will, I believe, establish the following facts, viz.:—That syphilitic teeth are seen in their most typical form, when they have been developed free from the influence of mercury; that in such teeth the enamel to all appearance is evenly developed over the dentine (in a great many cases it may be less thick than normal over the point of the central lobe in the incisor and absent from a limited area on the masticatory surface of the first molars, but I am not sure mercury has not been administered in such cases). Where the enamel is evenly developed, the tooth is not affected as to colour. As originally observed by Mr. Coleman, the affected teeth are almost invariably dwarfed, the distal edges of the upper central incisors are turned outwards, and in the front of the mouth the alveolar portion of the upper jaw is deficient in vertical development.

When the upper incisors are of typical form, I believe it is exceedingly rare for the lower incisors to be altogether unaffected, and the first permanent molars are exceedingly prone to be smaller and more dome-shaped than usual (Compare figs. 12 and 13 in Pl. IV.). My impression is, that it will be found that syphilis acquired shortly after birth may confer on the teeth that are later formed than the incisors a characteristic form, while the incisors escape, and that thus the deformity is not necessarily due to heredity.

A remarkably interesting case that my friend Mr. Ackery has taken models and notes of may throw light on this question.

I have not a section of a well-marked typical syphilitic front tooth, not having met with one that I felt justified in extracting; but, judging from their external form only, I believe their peculiar shape results from a stunted development of the first-formed portion of dentine,—in other words, a dwarfing of the cusps; and that the single central notch on their cutting edge is due to a greater diminution

in the size of the central lobe than in that of the lateral lobes.

The lesser width of the first-formed part of the crown, as compared with the later-formed portion, the most distinctive feature of these teeth, is explainable in the same manner.

Two years back Mr. Hutchinson read a paper at the Pathological Society, on "Lamellar Cataract and Imperfect Teeth," and expressed the opinion that the honeycombed condition of the teeth was, in a large number of cases, produced by the administration of mercury in infancy. My observations on the subject did not lead me to the same conclusions until I found that Stedman's powders contained calomel. When I became aware of that fact, the cases I have noticed, both in private and hospital practice, lead me to agree with Mr. Hutchinson that in a large number of cases, mercury (in some form or other) administered in infancy, is the cause of this faulty development of the enamel of the teeth.

Mercury may be a necessary medicine for a child when suffering from some complaints; but it is certainly desirable that the effect it may exert on the teeth should be recognized by us and by the public, if Mr. Hutchinson's views, with which I quite coincide, are borne out by further observation. To, unnecessarily, give teething powders which may ruin the teeth is certainly not desirable.

Various opinions are held as to the cause of this enamel defect. Some regard it simply as a manifestation of depressed nutrition of the general system at the time of tooth-formation, whether such condition be due to scrofula, or to the exanthemata, or to any severe illness. Thrush in infancy is also considered a sufficient cause for its production.

Mr. Bridgeman last year started the theory, founded on the observation of one case, that honey-combing was due to an electro-chemical action on the teeth as they erupted. His views were discussed and answered at the Odonto-Chirurgical Society at Edinburgh.

As my paper has extended to a length much greater than I intended, I will conclude by saying that it appears to me that syphilis, in its misshapement of the teeth acts, by disturbing the vascular supply of the pulp (and possibly

also of the dental sac, as these structures derive their vessels from below), and that mercury expends its harmful force on the enamel, which may derive its nutrition partially from above, from vessels (as I understand Mr. Charles Tomes to say) common to it and to the gum; and that mercury, while it may prevent the development of the syphilitic type of tooth, may in its place produce the defect in enamel-formation.

Gentlemen,—Before taking my seat I must express regret for the crude form in which my ideas have been brought before you. I trust that the discussion which will follow will more than make up for the shortcomings of the paper read.

The discussion which followed the reading of Mr. Moon's paper appeared in last month's number. The adjourned discussion will be found in our report of the last meeting of the Odontological Society, which is given below.

Odontological Society of Great Britain.

The last meeting of the session was held at the Dental Hospital on Monday the 4th inst., Samuel Cartwright, Esq., President, in the chair. The first half-hour having been almost entirely occupied in taking separate ballots for the numerous candidates for admission to the Society,

MR. OAKLEY COLES gave notice that at the next meeting he would propose that a change be made in the mode of voting for candidates.

MR. WEISS exhibited a supernumerary bicuspid. It resembled a well formed first bicuspid; the others were also well developed, the supernumerary tooth being united to the ordinary first bicuspid. It was a curious fact also that the patient's father had a similar tooth. He had not been able to find a similar specimen in the museum, and believed that supernumerary bicuspids were rare.

MR. COLEMAN said it was true that such specimens were rare, but he remembered that one had been previously brought before them. The gentleman who exhibited it quoted Dr. Darwin as an authority for stating that apes had three bicuspids. He thought, therefore, that the occasional appearance of an extra bicuspid in man might

be only a partial reversion to our former quadrumanous state.

The PRESIDENT then called upon Mr. Moon to open the adjourned discussion on his paper.

Mr. MOON said he was very glad to have the opportunity of saying a few words before the discussion recommenced, and of answering the question which Mr. Coleman addressed to him at the last meeting. He had not then read Mr. Bridgeman's paper on "Dental Nomenclature," or he should have been glad to have availed himself of Mr. Bridgman's carefully worked out ideas, and to have acknowledged his obligation to the author.

In his own paper he had laid stress on the tendency of individual denticles to be modified and to assert a partial or complete autonomy, as evidenced by supernumerary cusps, by supernumerary teeth, by the sharp pointed teeth of the children whose cases he had brought forward, and by typical syphilitic teeth. He had also suggested that some odontomes might be considered as due to the misdevelopment of a supernumerary in union with a normal tooth pulp, rather than as an outgrowth from the latter: also that the tendency of the dentinal pulp to break up into smaller dentinal systems, might account for the arrangement of the enamel and dentine observable in coronary odontomes, in which it attains its climax. He was also daily strengthened in the belief that in some people it would be found that the even surface of the dentine, was replaced by one presenting fine processes, interdigitating with processes of enamel. He would ask Mr. Charles Tomes if he had observed anything of the kind, and if so, whether it might not account for the hitherto unexplained presence of dentinal tubuli amidst the enamel? He would be glad to know whether Mr. Coleman agreed with the opinion he had expressed, that the typical syphilitic tooth was of normal colour when the enamel was not defective. And lastly, there was the question as to the causes which produced the honeycombed state of the enamel. Such were the points in his paper which he should be glad to hear discussed, and either upheld or demolished as they might deserve.

The PRESIDENT then invited the members present to discuss the points which Mr. Moon had just recapitulated. He hoped that all would express their opinions

freely, however these might vary. He thought he had occasionally noticed a tendency on the part of speakers, arising either from an unwillingness to express opinions at variance with the majority, or from a still more mistaken fear of hurting the feelings of the author of the paper, to dwell upon points of agreement and to avoid those which might be controverted. He thought this was a pity, since real agreement could only be obtained by the free expression of opinion on all sides, and by the candid confession of difficulties. The point which he himself felt inclined to doubt was as to the alleged disastrous effects on the teeth of mercury when given in infancy. Mercury had formerly been given both to children and adults much more freely than was now the fashion, yet honeycombed teeth were probably more common now than they were then. Children were, in fact, singularly insensible to the effects of mercury; but they were, especially when hand-fed or naturally delicate, very liable to some affections of the mouth, to various forms of stomatitis and gingivitis, which would be very likely to interfere with the nutrition of the growing teeth; and it was to these local causes rather than to mercury that he should be inclined to assign the occurrence of honeycombed teeth. At the same time, though he did not believe that mercury used as an occasional purge could have any permanent ill effect; he thought it possible that when given in frequently repeated small doses it might do harm to the teeth by favouring, or even causing, the occurrence of those local ailments to which he had already referred.

Mr. CHAS. TOMES said that Mr. Moon had appealed to him for an explanation of the way in which the interdigitation of dentine and enamel which was found in the teeth of marsupials and of some fish was produced. He was sorry he could not enlighten Mr. Moon. We knew something about the development of the dentine, and something about the mode of formation of the enamel, but we did not as yet know enough to enable us to explain how it was that in these rare instances dental tubuli were found penetrating the enamel. He should like to say a few words respecting Mr. Moon's theory of denticles. Because the tops of the incisors were sometimes trilobed Mr. Moon supposed them to be composed of three denticles

No doubt the incisors were formed from at least three centres of calcification. He thought probably from four; but was Mr. Moon justified in speaking of these centres as three individualities forming one tooth. Mr. Moon had mentioned the case of a gentleman who possessed very translucent incisors, in which the upper edge of the dentine could be seen to end in three points; but he did not look upon that as showing a natural tendency to a tripartite division of the tooth, but rather as evidence of a distinctly pathological fact—viz., as showing that the growth of the dentine had not proceeded as evenly as it should have done. To take a common illustration: the calcification of the molars began in the four cusps, and these should join evenly to form a perfect crown, but sometimes calcification did not proceed equally fast in two neighbouring cusps, and then, instead of the join being level, a little pit or sulcus resulted; and this was what had occurred in the incisor, the areas of calcification had not joined as perfectly as they should have done. Supernumerary teeth were no doubt in many instances due to a further step in the same direction, viz., the complete absence of union between neighbouring centres of calcification. Nor did he think that Mr. Moon's theory was borne out by the teaching of comparative anatomy. The teeth of the insectivora, for instance, were generally furnished with numerous cusps, and the arrangement of these cusps was often an important distinction between genera. Now on one of these teeth you might find four well marked cusps, and besides these near the gum you would find a basal ridge; but in the teeth of another genus you would find this ridge more elevated and divided into cusps. Were we then to suppose that the simpler tooth was really composed of eight or ten denticles, but that some of them were undeveloped? Or was it not better to look upon both as being varieties of one form of tooth, without descending to the consideration of imaginary units. With regard to the connection of honeycombed teeth with mercury he was inclined to support Mr. Moon's views. Mr. Moon had inquired very carefully into a large number of cases, and had found that in a great many all other probable causes except mercury could be eliminated, and that the repeated use of mercury was the only feature common to the group. He thought it was scarcely fair to oppose

mere impressions to Mr. Moon's carefully worked out facts. If anyone could bring forward an equal number of cases in which it could be as positively shown that no mercury had been given, well and good; but even then he did not understand Mr. Moon to say that mercury was the only cause of honeycombed teeth, but that it was the most common cause.

Mr. S. HUTCHINSON said that Mr. Moon's observation as to the trilobed tendency of the incisors was quite correct; he had a patient with cleft palate in whom the edges of the lower incisors, which had no teeth opposed to them, and were consequently not at all worn, showed the two notches very plainly. But he could not altogether acquiesce in the denticle theory; he thought that if an incisor was made up of three denticles there would be some trace of this formation in the shape of the pulp cavity. Now the pulp cavity of an incisor was circular, and that of the canines cleftical, and he thought these regular shapes rather negatived the theory of the composite nature of the teeth in question.

With respect to the effects of syphilis on the teeth. As Mr. Moon had had great opportunities of studying the question he should like to ask him if he could give any reason why the central incisors should be specially affected? And also whether he thought that the period at which the syphilitic contagion had been communicated made any difference in the nature or extent of the consequent lesions; whether, for instance, he had noticed any difference between the teeth of children who had been congenitally syphilitic, and those who had been infected later, as by vaccination? He had met with a good example lately of the so-called mercurial teeth. A child had been brought to him in whom all the temporary teeth were badly honeycombed, the central incisors being almost destitute of enamel. The history was that the child had had convulsions when a month old, and had been freely treated with mercury. At the same time he did not feel altogether convinced that the mercury was entirely to blame; might not the disturbance of the nervous system of which the convulsions were evidence, also interfere with the healthy growth of the teeth.

Mr. OAKLEY COLES said that a child had been brought to him whose peg-shaped temporary teeth were very cha-

racteristic of syphilis—the child's mother had long been affected with the disease. Syphilitic deformity of the *temporary* teeth was very rare; he thought probably because in most instances the child's mother was healthy, and was only indirectly contaminated, perhaps after impregnation had taken place. He thought that it would probably be found that the extent to which the teeth were affected would vary according to the date at which the disease was communicated, and that in some cases this might be useful for medico-legal purposes, when it was desirable to ascertain whether the syphilitic taint had descended from the father or the mother of the child.

Mr. COLEMAN remarked that the case Mr. Coles had just mentioned was a very remarkable and important one; he hoped that he would take an early opportunity of relating the full particulars to the society. Mr. Jonathan Hutchinson had never seen evidences of syphilis in the first set of teeth. With regard to Mr. Moon's query respecting the colour of syphilitic teeth, his opinion was that in bad cases the enamel was yellowish and rather translucent, reminding one of size as seen in the oil shops. But in slight cases this characteristic appearance was not seen. He did not intend to assert that the change was really in the enamel. Changes in the dentine would alter the colour of the enamel as in the opaque appearance produced by commencing caries, and it might be that the altered appearance of the syphilitic tooth was due to some change in the dentine.

Mr. MOON said that as it was already late he would reply very briefly to the criticisms which had been made on his paper. With regard to the denticle theory he thought he had some authority on his side. Without going quite so far as the insectivora, he remembered that Professor Rolleston, in a paper read before the Society, had spoken of the large compound teeth of the elephant as being composed of numerous denticles. He agreed with Mr. Tomes that the independence, or partial independence, of denticles must be looked upon as a pathological condition. He thought that the fact that the shape of the pulp chamber afforded no indication of the separation into denticles was accounted for by the early period at which union took place. Then as to mercurial teeth he could only say that he had made the most careful inquiries on a uniform plan

into every case of honeycombed teeth which he had met with. He had asked particularly whether the child had suffered from thrush or any other form of stomatitis, what general ailments it had suffered from, what medical treatment had been pursued, and what domestic remedies had been administered. Of course he had carefully avoided putting leading questions respecting the administration of mercury, but the result of his inquiries was that this was the only constant factor to be met with. He might mention the case of a family of whom the eldest had her teeth only slightly pitted, whilst those of the younger children were dreadfully honey-combed. On inquiring he found that the eldest got no mercury till she was seven months old. She was then placed in charge of a nurse who had a strong partiality for Stedman's powders, and from that date she had a powder once or twice a week. The other children were submitted to the same treatment from the age of one month. There was no doubt that those teeth suffered which were being developed at the time the mercurial treatment was being carried on. The origin of the syphilitic lesion was not so clear; it was apparently due to some more recondite influence, and he could not suggest any explanation of the fact that the central incisors were affected rather than any of the other teeth.

The PRESIDENT then called upon Mr. S. Hutchinson to open the discussion on the treatment of alveolar abscess.

Mr. HUTCHINSON replied that the ordinary time for terminating the meeting had already arrived, and it could only be prolonged by the wish of the members present. It had been announced in the "Transactions" that he would read a paper; he had only jotted down a few notes just sufficient, as he hoped, to start a discussion, but if it were the wish of the Society he would write a paper, and would bring the subject before them early in the succeeding session.

The PRESIDENT said that he hoped Mr. Hutchinson would write the paper, and the Society would be glad to hear it and discuss it under more favourable condition than would be possible that evening.

After the usual vote of thanks the meeting terminated.

The General Council of Medical Education and Registration.

SESSION 1877.

At the meeting of the Council on May 15th, Dr. Wood read, and moved that it be entered on the Minutes, the following memorial from the Royal College of Surgeons of Edinburgh, in regard to dental surgeons :

“The memorial of the President's Council of the Royal College of Surgeons of Edinburgh sheweth,—

“That your memorialists have had their attention drawn to certain proposals at present before the Royal College of Surgeons of England, to the effect that those persons only who possess the qualification of Licentiate in Dental Surgery of the Royal College of Surgeons of England ‘shall be entitled to use the designation of Dental Surgeon, Surgeon Dentist,’ &c. ; also, ‘that a special schedule be added to the Medical Act for the registration of dental surgeons as such ;’ as well as to certain other suggestions that those only who possess the said qualification of Licentiate in Dental Surgery shall be entitled to hold dental appointments in hospitals, or to sign schedules, or grant certificates of attendance to dental students.

“That your memorialists are of opinion that the suggestions and requirements of the Royal College of Surgeons of England regarding registration of dental surgeons, and otherwise, could only receive effect under the Authority of an Act of Parliament, and that such legislation, as creating a monopoly of teaching and registration of dental surgeons, would be injurious to the interests of the other surgical corporations recognised by the Medical Act and an interference with the rights and privileges of the members or licentiates of these bodies.

“That your memorialists are further of opinion that if the separate registration of dental surgeons in the Medical Register should be found to be either necessary or expedient, the right to such registration should not exclusively be confined to the members or licentiates of one corporation, but be extended to all the institutions who at present grant diplomas in surgery.

“Your memorialists therefore pray that the sanction of the General Medical Council shall not be given to any application for power to register the qualifications of dental surgeons, without obtaining the approval or the views of all the licensing bodies, under the Medical Act, possessing an interest in the matter referred to.

“In the name of the Council,

“(Signed) HENRY D. LITTLEJOHN, M.D.
“President.”

Dr. STORRAR said he had expected to have been made the medium of a communication on the same subject from the English dentists, but he had been informed that they had resolved to defer the consideration of the matter for the present. The committee, he thought, could hardly report upon the subject without fuller materials than those furnished from the College of Surgeons of Edinburgh.

Dr. WOOD thought the Council should give an opinion upon two points: whether there should be a separate register for dentists, and whether, if so, only those who had passed the College of Surgeons of England were entitled to be registered.

Sir J. PAGET said that no application was being considered by the College of Surgeons to the effect that only the licentiates of that body should be registered. He should be sorry to have it supposed that the College was encouraging any such proceeding.

The Memorial was referred to the Medical Acts' Committee.

On May 17th, after the business of the day, the Council resolved itself into Committee to receive and consider the following section of the report of the Medical Acts' Committee—"As regards the memorial of the Royal College of Surgeons of Edinburgh, referred to this committee, the committee has to report as follows: 'The matter of the memorial does not, in the opinion of the committee, require the Council at present to express any judgment in regard to it; but the committee suggests to the Council that a copy of the memorial should be sent by the Council to the Royal College of Surgeons of England, for the information of that College.'"

Mr. SIMON moved, "That a copy of the memorial received from the College of Surgeons of Edinburgh with regard to dental surgeons be sent to the Royal College of Surgeons of England, for the information of that College."

Dr. STORRAR seconded the motion.

Dr. WOOD objected to the motion. He thought the matter was one upon which the Council might fairly be called upon to give an opinion. A great agitation was going on at the present time in the dental profession, which was divided into two camps. It was desired that no man should be entitled to practise or call himself a surgeon-dentist unless he had received a certificate from the Royal College of Surgeons of England; and it was also proposed that there should be a schedule in the Register for the registration of dental surgeons as such. He thought it would be neither expedient nor fair to have special schedules for

dentists, oculists, aurists, or chiropodists. Everyone who had a licence in surgery was certainly qualified to practise as a dentist. He proposed as an amendment, "That, having considered the memorial of the College of Surgeons of Edinburgh as to the question of dental surgeons, in the opinion of the Council it is not expedient that a special schedule should be added to the Medical Act for the registration of dental surgeons as such; and that a copy of the memorial be sent to the Council of the Royal College of Surgeons of England for the information of that College."

Mr. SIMON said the committee quite felt that it would be the duty of the Council to take a vote upon the subject if it came before the Council as a proposal, but the College of Surgeons had not so dealt with it. If that College were proposing to alter the Medical Act it would be time to speak, but it was not for the Council to pass abstract resolutions and trouble itself unnecessarily as to every request that might be made to other bodies. It would be jumping long before getting to the stile.

Sir J. PAGET said that the action of the College of Surgeons had been entirely misunderstood by the memorialists. No suggestion had been made by that body of the kind intimated in the memorial. The question by whom the qualifications of those who were to hold certificates of having studied dental surgery should be signed had not even been considered by the College; nor had it before it any scheme for the registration of dental surgeons. It would be therefore almost unseemly to send the memorial to the College as accepted by the Council as stating anything approaching the real state of matters. It would be sufficient to receive it and enter it on the Minutes.

Dr. WOOD thought there was a misprint in the memorial, and that the suggestion had been made not *by* but *to* the college. The question, however, had been agitated for a long time, and he thought it better that it should be quashed at once.

Dr. STORRAR agreed with Mr. Simon that it would be taking a very long leap for the Council to pass such a resolution upon the memorial. There was a great discrepancy of opinion on the subjects amongst the dentists themselves. He believed that the College of Surgeons of England had never taken up any position in relation to surgeon-dentists which was not shared by the Colleges of Surgeons of Edinburgh and of Ireland.

Dr. WOOD's amendment was put and negatived. The original motion was then carried.

Meeting of Dentists at Manchester.

A MEETING of the Dental Profession took place at the Clarence Hotel, Spring Gardens, Manchester, on Saturday, May 12, for the purpose, as stated in the circular issued by Messrs. John Laws and John O'Duffy (Hon. Secs. *pro tem*) "of considering the best method of providing a qualification which will be within the reach of existing reputable practitioners. A scheme, which has already received the sanction of a number of the leading members of the profession in London and elsewhere, will be laid before the meeting, and a Committee nominated to carry the same forward." A foot-note to this circular stated that "Persons who advertise in the public journals, or by circular, either their profession or their professional attainments or public appointments, or anything relating to their mode of practice or charges, or who expose for public inspection specimens of operative or mechanical dentistry, are prohibited from attending this meeting."

Mr. OAKLEY COLES (London) was voted to the chair, and amongst the gentlemen present were:—

W. H. Waite, Esq., D.D.S., Liverpool; T. M. Kelly, Esq., Manchester; Frank Richardson, Esq., Derby; Edwin Cox, Esq., L.D.S., Preston; David Wormald, Esq., D.D.S., Bury; R. Rogers, Esq., Cheltenham; Sidney Worwald, Esq., Stockport; W. MacLeod, Esq., Edinburgh; J. Harrison, Esq., Sheffield; Frank Huet, Esq., Manchester; Edmond Harrison, Esq., Lancaster; J. Roberts, Esq., Liverpool; T. H. King, Esq., York; E. H. Williams, Esq., Manchester; — Richardson, Esq., Derby; — Renshaw, Esq., Rochdale; — Buckley, Esq., Rochdale; H. F. Seales, Esq., Kendal; — Murphy, Esq., Bolton; S. Stott, Esq., Littleborough; — Hopkinson, Esq.; John Laws, Esq., Bolton; John O'Duffy, Esq., Dublin; &c., &c.

After Mr. LAWS had read the circular calling the meeting, the Chairman called upon Mr. O'Duffy to explain the object of the meeting, to give a history of the movement, the way in which it originated, what is proposed to be done in Ireland, and how the dentists of England are expected to help towards the object in view.

Mr. O'DUFFY (Dublin), who was received with applause, said he would only give a short account of the history of the movement which led up to that meeting. It entirely originated out of the desire, extensively entertained by

the members of the dental profession, to possess a qualification. It might be remembered that, some few years ago an effort had been made to induce the Royal College of Surgeons of England to re-open their gates to dentists who had been in practice previous to the establishment of a dental diploma in 1859. Although the promoters of the Dental Diploma Petition succeeded in inducing the College of Surgeons to accede to their request, restrictions were imposed which practically left the applicants in the same position as they were when they unfortunately allowed the days of grace to expire without presenting themselves for examination. When we consider that no provision was made by which dentists in practice for five or even ten years could obtain the diploma without a residence of two years in London, the greater portion of the profession now is actually condemned to pass their existence without a hope of obtaining a qualification so far as the Royal College of Surgeons, England, is concerned. A desire for the possession of a qualification having become so general, it was determined to look to the other licensing bodies in the United Kingdom. There being no educational establishment in the vicinity of the licensing bodies in either Ireland or Scotland, the Dental Hospital of Dublin was founded for the purpose of supplying that want. Before appealing to any licensing body outside of London to institute a dental diploma, it was thought wise to ascertain the feelings of the heads of the profession in London, and for that purpose Mr. Sidney Wormald and he (the speaker) waited upon such men as Saunders, Tomes, Cartwright, Fox, Vasey, Oakley Coles (our worthy chairman), James Parkinson, Turner, &c. He was very happy to say that their scheme was most favourably entertained; no hostility whatever expressed to the establishment of a rival diploma; quite the contrary, for they returned home with liberal donations towards the object they had in view. Now, seeing the almost universal desire on the part of reputable members of the profession to possess a qualification, and having ascertained beyond all doubt the friendly feelings which the heads of the profession in London entertain towards the scheme, he would just mention what we think must be done before appealing to the Royal College of Surgeons, Ireland, to institute a dental diploma. It was this:—A School of Dental Sur-

gery should be established in connexion with the Dental Hospital in Dublin, where the future generation of dentists could receive instruction and practice. It is believed that it will be necessary for the College to obtain a charter (the expense of which will be very considerable) before granting diplomas. As far as we can ascertain, the fees likely to be received from dentists practising in Ireland alone, who should present themselves for examination for the diploma, would not cover the outlay which the College would have to incur. We must, therefore, only look to our brethren in England and Scotland (whom he was happy to see in such numbers around him) to aid in a cause they all had so much at heart. He wished it to be distinctly understood that he was not speaking on behalf of the Royal College of Surgeons, Ireland, or of its Council, but he could assure them that if the petition of the Irish dentists should be backed up by a good contingent of their brethren in England and Scotland, there were those on the Council who would see that their application would be favourably entertained.

The CHAIRMAN remarked that Mr. Laws had received communications from a number of gentlemen, and it was thought desirable he should read some of them, as, with very few exceptions, he believed they were all in favour of the movement now under consideration. It was well they should know those who were their friends, and those who, if not their foes, were something worse, in being lukewarm friends.

Mr. LAWS stated that he had received 53 letters since the circulars were sent out, 52 of which heartily approved of the scheme, and one only was slightly lukewarm. He then read the replies of Mr. James Smith Turner, Hanover Square, London; Mr. Alfred Oddie, Camberwell New Road, Kensington Park; Mr. James Jarvin, Glasgow; Mr. Norman Kings, Exeter; &c.

The CHAIRMAN—It will now tend to the despatch of business if I call upon Dr. Waite, of Liverpool, to move the first resolution. We then shall have something definite before us to discuss, and be in a position to hear any gentleman who has any special views to bring forward.

Dr. WAITE (Liverpool) said the pleasure with which he responded to the Chairman's call was not altogether unmixed with regret, for he felt that the resolution which he

held in his hand was pregnant with suggestions of such paramount importance to the future well-being of the profession, that he could well wish the duty of proposing it had fallen into abler hands than his. It would be in the remembrance of most of those present that the object of the last meeting in that place was to make suggestions to the Dental Reform Committee, to the effect that they should endeavour to induce the College of Surgeons to relax the stringency of the rule of admission and examination with regard to existing practitioners. It would be remembered, too, that their object was defeated by the action of a few gentlemen who already possess the diploma of the Royal College of Surgeons. He was not going to occupy their time by criticising those proceedings, except to remark that it would have been more graceful and generous on the part of those gentlemen if they had come there to assist their less fortunate brethren, rather than combine to oppose them, in the laudable purpose of improving their position. It had come to pass, however, that those who require a recognised qualification must seek it elsewhere, for it had been sufficiently demonstrated that they must not expect any modification whatever in the terms of the Royal College of Surgeons of England as to the examination of existing practitioners. It is said that when things came to the worst they always mend, so in this case. There were strong indications of a willingness on the part of some members of the College of Surgeons of Ireland to favour the establishment of a dental diploma. They must remember, too, that this diploma would bear the authority of the same Government, and possess a value not a whit inferior to that of the College of Surgeons of England. This cheering intelligence came to them through the efforts of one of the most energetic dental reformers. They were all aware of the establishing of a dental hospital in Dublin, and of the organization of a staff of dental surgeons; and it was now stated that they desired to establish a school for the training of young men in the art of dental surgery. He had little doubt this would soon become an accomplished fact; and, when once organized, an appeal would be made to the College of Surgeons of Ireland to examine and qualify the pupils, and at the same time to examine and qualify existing practitioners throughout Great Britain on reasonable

terms. He believed in giving honour to whom honour was due, and therefore he thought it right for all to know and recognise the fact that their best thanks were due, in this matter, to the indefatigable enterprise and untiring energy of their friend Mr. O'Duffy. This, then, was the project brought before them to-day. He sincerely hoped and trusted it would have a large degree of co-operation on the part of those it was particularly designed to benefit; he meant the rank and file of the profession in Great Britain. They could not be insensible to the fact that there was a vast amount of indifference to the value of a qualification. He would give one or two reasons why they should get rid of this indifference. One was that in the public prints attention is being called to the fact that there was such a thing as a dental qualification. At the previous meeting he had in his pocket a copy of the *Leisure Hour* for the current month, containing an article on the dental profession, in the course of which the writer informed his readers that there were dentists and dentists, that a large number of those now practising dentistry in Great Britain had no title to do so, and that licentiates of the College of Surgeons were the only qualified dentists. The terms qualified and unqualified were used freely throughout the article with that signification. This sort of language also appeared in several other periodicals, and the public were being educated to believe that the licentiate of the College of Surgeons was the only true and legitimate dentist. Another point he wished to mention was that in connexion with hospitals there was the appointment of dental surgeons. These appointments were to them, no less than to the medical profession, of great value as an introduction, and an advertisement, in fact, not only to young practitioners, but to all who desired to improve their professional position. These appointments were no longer open to fair competition, but were monopolised by licentiates of the College of Surgeons. These things showed that the position of dentists holding a qualification was being marked off from that of their unqualified brethren. Now, if they desired the elevation of the profession, they must shake off all indifference in this matter; and if this consideration was not strong enough, he thought they would surely be guided by the first law of nature—that of self preservation. Mr. O'Duffy had hinted some-

thing of the difficulties of the practical working of the scheme. He might repeat the statement that the cost would be met by 100 out of the 1,200 unqualified practitioners of Great Britain being resolved to present themselves to the College in Ireland for examination. Their fees would fully indemnify the College for the outlay incurred in obtaining the power to institute the diploma. He thought from the number present that day that they would not have much difficulty in carrying out that scheme. The appeal was made to the 1,200 dentists now virtually excluded from the English diploma to take up and second the efforts of Mr. O'Duffy and those who are working with him in instituting this Irish diploma. They wanted this stigma of being unqualified to be removed. "'Tis not in mortals to command success; but we'll do more, Sempronius—we'll deserve it!" They wanted those who had grown grey in the profession to come forward and lead them on, and not to rest satisfied merely in the confidence of their patients, but to determine that their long years of faithful toil should be accredited by an authoritative body; they wanted the young men to enter heartily into this movement, for beyond all doubt, in years to come, on them would press most heavily the stigma of not being qualified. They wanted all, both old and young, who esteemed their profession, to join in a long pull, a strong pull, and a pull altogether, to lift it out of the degradation to which it had sunk in the public estimation, and to place it where it ought to be, on a level with other professions which were the ornament and pride of the land. And seeing that a qualification is denied to us bearing upon it the fragrance of the English rose, let them cheerfully go in for one (and for his part he was free to confess he should wear it with equal pride) decorated with the shamrock of the sister isle. The resolution he had to propose was as follows:

"That we hail with satisfaction the efforts that are being made by the dental profession in Dublin to induce the Council of the Royal College of Surgeons, Ireland, to institute a dental diploma, and and we pledge ourselves to give the movement our cordial support."

Mr. HARRISON (Sheffield) said that when he came to the meeting he was not aware he should be called upon to say anything at all. He merely came for the purpose of hearing what Mr. O'Duffy had to say, and receive instruction as to the scheme he would lay before them. They had

all heard that scheme. He had very great pleasure in supporting the resolution. In reference to the barrier placed against gentlemen who were in practice before 1859 and since, it was impossible for any gentleman who had ever advertised to seek for admission to the Royal College of Surgeons for examination. He had had a conversation with Mr. Fox, when in London last year, and that gentleman said it was rather too bad to hold out that the doors of the College were open to those who choose to enter, when on the threshold they were asked if they had ever advertised, and the nature of the advertisement. It would have been an insult to him, if he had presented himself. He agreed with Dr. Waite that every effort was being made to place before the public information as to who were qualified dentists. In Sheffield they had a paper called the *Sheffield Telegraph*. A letter appeared in it, which he had submitted to Mr. Wormald, telling the public that anæsthetics could not be administered, either by qualified or unqualified dentists, without considerable risk, and also calling attention to the fact that the examination instituted by the Royal College of Surgeons was of a stringent character, and if the public wished to know who were qualified men they must look in the *Medical Directory*. He thought that rather too stiff upon the gentlemen in practice thirty or five and thirty years ago. He had great pleasure in seconding the resolution.

The CHAIRMAN observed that the resolution was now before the meeting, and anyone present had a chance of speaking his mind.

Mr. BRUNTON (Leeds) said he hailed with great satisfaction the scheme explained by Mr. O'Duffy. A tone had been given to the meeting which he had not expected in the presence of Mr. Oakley Coles in the chair. They were all aware, or ought to be, that Mr. Oakley Coles held a qualification by curriculum, and he was glad to see that such gentlemen did not hold themselves aloof from the movement. He was not qualified himself, but should be most happy, on the first opportunity, to qualify if it lay in his power.

Mr. ROGERS (Cheltenham) fully agreed with what had been said. He took a decided interest in this movement. In 1859 he attended one of the first meetings of the College of Dentists in London, and he had the pleasure of

beginning his studies with the Chairman, and at that time he had the offer of a very good practice in Cheltenham. He gave up his studies, and went there to take care of the practice of a gentleman who was paralysed. Of course, since then his work had been very arduous, but now he had more time on his hands, and should have pleasure in obtaining a diploma if it was possible.

Mr. EDWIN COX (Preston) said it was only yesterday he first heard of the scheme. He had listened with great interest to Mr. O'Duffy's explanation, and listened most eagerly to hear if the scheme embraced the idea of a line that would reach the chemists and druggists, or if it was simply giving educational opportunities for any who wished to obtain the diploma. It appeared to him an unjust thing that men superior to him in every respect should not have an opportunity of obtaining the diploma he himself possessed from the College of Surgeons. Mr. Richardson and other dentist friends had been hardly treated by accidental and unfortunate circumstances preventing them obtaining the diploma. He should be happy to do anything in his power to assist the scheme. The great difficulty they met with was in connection with all sorts of people beginning as dentists, especially chemists and druggists. In the town of Preston, for instance, a chemist was doing more business than any of the dentists. He did not know how they were to be touched and prohibited from advertising. He would like to hear how the scheme touched that class.

Mr. ROGERS added to his previous remarks that he had taken one diploma, but it was overthrown by the Odontological College, and therefore he was out in the cold.

THE CHAIRMAN, referring to the remarks of Mr. Cox, said it was well to understand that the burden of selection would rest with the College of Surgeons, and not with the dentists. They would only ask them to institute an examination for the diploma, and the College would take the responsibility of selecting those to be admitted. The College of Surgeons, he was sure, would take good care the interests of dental surgeons would not suffer by those they invited to be in possession of the dental diploma.

Mr. MACLEOD (Edinburgh) expressed the pleasure he had in being present at the meeting, and also in giving his support to the resolution. He received a circular, and

made arrangements immediately, to be present to express his sympathy with the movement, and also to show the deep interest he took in everything connected with the profession. He was one of the unfortunate gentlemen born in the provinces, and who had not the good fortune to be able to reside for any long time in London. In 1859 he had commenced in the profession, but had not finished his course of pupillage, and from that fact he was excluded from appearing before the Board of Examiners in London. He was not aware of this at first, and after his pupillage proceeded to take advantage of all the means within his reach, and in this way he had been able to attend all the surgical and medical classes for the dental diploma, but being unfortunate enough not to be able to reside in London for two years, so as to take up the mechanical portions of the curriculum, he was excluded from the diploma, notwithstanding, too, that he had served five years' apprenticeship under a fully qualified and competent dentist. Therefore, he desired with those present to be recognised in some way or other, for they could see the drift in the profession was to have the recognised qualification. He hoped that in time there would not be a dentist practising without some recognised qualification. He desired to see the day, and hoped it was not far distant, when they would have an Examining Board for Scotland as well as for Ireland. He could not refrain, consequently, from being present to support a movement to assist the brethren in Ireland, expecting, on the other hand, that when they in Scotland began to move in the same direction they would have their support. On such a question they should sink all personality. The only thing to consider was how to elevate the profession. If a man was earning a livelihood by the pursuit of dentistry, let them do all they could to elevate him, and in elevating him they would do themselves the greater credit. It could only be done by uniting together and acting as one body. He therefore heartily supported the resolution, and promised his support to any movement that might tend to elevate the profession before the public.

A Manchester dentist said that a School of Dentistry in connexion with Owen's College had been spoken of, but they could not push that at present. He, for one, should present himself to the College of Surgeons of Ireland if the scheme was carried out.

The CHAIRMAN then put the resolution to the meeting, and it was carried unanimously.

Dr. D. WORMALD said he rose with very great pleasure to propose the second resolution. It was as follows:—

"That for the purpose of carrying into effect the terms of the foregoing resolution, a Committee be formed to receive subscriptions and the names of those gentlemen belonging to the Profession in Great Britain who would be desirous of possessing the diploma, and that the Committee consist of the following, with power to add to their number."

If they were all sitting down to a nice dinner around the table, they might be inclined to partake thereof to enjoy themselves, but in that case they would know that in its preparation a great amount of labour and trouble had been expended by some one. In the matter before them, although they had passed the first resolution, it would not be of the slightest importance unless they were determined to carry into practical effect the second one. Those present perhaps looked at the question before them from various positions, and held their own peculiar ideas, but still, on many points they might agree. As their worthy Chairman had stated, they could not dictate terms to the Royal College of Surgeons. They might, however, safely trust that if the gates were opened, the College would do nothing to hurt existing interests, but would help to raise the profession, and tend to make it more appreciated by the public. Therefore, all they had got to do at present was to form a good Committee, so that in carrying the scheme into effect they might have the support of gentlemen in various parts of the country who might be desirous to take this degree. Members of the profession might attend the meeting, but unless they were prepared for the sacrifice of time and money, and labour, so as to create an interest in favour of this diploma, it would be of little use. It was becoming more apparent that the qualification of the diploma must be held, because every effort was being made to disparage those who did not possess the qualification, especially the old and reputable practitioners. The College of Dental Surgeons was turning out students out year by year, and if this scheme was carried as regards Ireland, and, he hoped, ultimately in Scotland, they would, in a few years, have a race of qualified dental practitioners. Time was going on, and to professional men time was money, therefore he would not trespass further on their patience. They all knew the work before them would

require ways and means. If they desired to do anything to raise the status of the profession, they must not only talk, but be prepared to work. Dentists, as a body, are slow to move, but still, looking at the greater number of them in the country in reputable practice, when an opportunity like this was offered, they could, with a good grace, go to the Royal College of Surgeons and ask that the diploma should be granted. If they did this with unanimity, he thought their prayer would be answered, and it would be for the good of the whole profession, which meant the good of the whole community.

Mr. MACLEOD briefly seconded the resolution.

Dr. WORMALD having submitted a list of names as a provisional Committee, with power to call in additional assistance,

The CHAIRMAN then said that brought them to the conclusion of the business, and perhaps he would be allowed to say a few words with reference to the general question. It seemed thoroughly unreasonable that they should calculate upon or expect any serious opposition to any scheme which had for its object increased educational facilities. Those who wished to elevate the dental profession, would rejoice at increased opportunities being given for obtaining the diploma, or of attending a Dental School. There was one point, however, that it was well they should understand. He happened to be Secretary of the Dental Reform Committee—a Committee charged with the object of inducing the Royal College of Surgeons to open their doors to those in practice prior to 1859. That Committee worked very hard, and with much intelligence and discretion, and they were assured that the prayer of the petitioners would be accepted in its widest sense. They had no conception, however, that the rule as to advertising would be carried back to those who had not advertised since 1859. That was a flank movement for which they were totally unprepared. They had no reason to anticipate it, and were all taken very much by surprise, as, practically, it threw all the work of the Committee into the background. The prospect was still held out that the Council of the College of Surgeons might be induced to rescind the resolution by which they had taken up such a position. It was not a bye-law, but simply a resolution in council, and there was no reason

why they should not supersede it by some more reasonable minute. He agreed that they ought to have a dental diploma in connexion with the Royal College of Surgeons of not only England, but also one as well for Ireland, and another for Scotland. He trusted that ere long they would find, in connection with Owen's College, Manchester, some facilities given for lectures, if not for a qualification also. He was surprised that a place like Manchester—the centre of progress, of radical movements, advanced thought and intellectual activity—was without a dental school or hospital of any note. It was no use blaming the centralisation in London, whilst they themselves abstained from having a centralization elsewhere. Speaking for himself and his confreres in London, they might rest assured of their hearty sympathy with those in the country. They in London realised their superior position in relation to the disadvantages of the respectable practitioners in the country. They knew how difficult it was to form local societies and to break down class prejudices and petty jealousies; but these had been broken down in London, and it only required the same amount of energy, of resolution and self-reliance, to do it in every town in England. There were local medical societies in towns of 7,000 inhabitants, and why not have dental societies. Sometimes they felt their position keenly in London. In many drawing-rooms one felt ashamed of being known as a dentist, in such disrepute was the profession held, and they would feel this more keenly in the provinces. But by forming societies they directly put a barrier between reputable and disreputable practitioners. This, too, would be a ready means of carrying on the work of education; for they must bear in mind the work of education did not finish when they left the dental school, but continued all through life. Certainly, speaking for himself, there was no better means of education than being present at dental societies. Let two men get up to speak on any subject, and it would compel them to go to their books, to be sure that they were speaking with intelligence and accuracy. They must bear in mind, too, that all who were practising dentistry with skill, and satisfaction to their patients, if they obtained the diploma to-morrow, it would not make them one whit better dentists. The object was to have some means of making it known to the public that they were

competent. In the words of Thomas Carlyle, he would say, "Do the work that is nearest to hand." They might, by these declarations of their skill, their competency and superiority over others, in their local meetings, make a declaration for themselves of competency, and by the exclusion of those who advertise, raise a barrier and create a moral law, which would undoubtedly be more powerful than anything legislation could do on the subject. A good deal had been said that afternoon about advertising. In the provinces, where one had to attend a number of places, it was difficult to avoid advertising, but they must bear in mind the object should be to inform patients that they were coming to a certain place; and if they simply advertised the name and place of attendance, they might do it till doomsday, and the Odontological Society would say nothing against it. But when they advertised their profession and the fees received for services, objection was taken. He was one of the most profound believers in advertising; but he had only advertised in accordance with the method pursued by medical men and others, and in a recognised way. He had advertised by reading papers before societies, with the object, in the first instance, of making himself known. It was no good to say he read the papers for the benefit of other people; it was for his own good. He had written books and advertised them in the medical press, and with a view to making himself known; but he had adopted the professional method, and in that way avoided bringing any stigma or odium on the practice which he pursued. So he would say, referring again to local societies, that was a legitimate way of advertising—a legitimate way of showing that they were more competent than A, B, or C, and understood their profession—and the sooner it was adopted the better. It would do good to themselves and to the profession, and do away with what they all thought such a terrible thorn in the flesh—advertising in the public press. There was one other point he wished to mention. Some reference had been made to the number of dental practitioners. It was well that it should be known that there are something like 2,000 gentlemen professing to practise dentistry. Another point was that they must not expect reform to be sudden, if sound. No Act of Parliament would make a body of men, carrying on their practice unsatisfactorily, suddenly respectable. They must not hope that they were going to be whitewashed in that way. Great reliance

must be placed on a process of education. Giving increased facilities for education was the soundest way to dental reform. He was glad to see that the feeling which prompted most of them in coming to that meeting was for the sake of the members of their families who were going into the profession. It was to these increased educational facilities they must look for improvement in the general status of the profession, thus raising the dental practice from a mere trade to a very learned and high profession.

The list of subscribers was then read.

On the motion of Mr. Sidney Wormald, a vote of thanks was cordially given to the Chairman for coming down from London and presiding over that meeting.

Reviews of Books.

Notes from a Dentists' Case-book. By FELIX WEISS, Esq., L.D.S.

We have here a compendium of very interesting cases faithfully recorded — “‘Notes’ written to give my individual experience; whether that experience coincides with others must be left to the judgment of the reader.”

With the majority of the opinions expressed by Mr. Weiss, we agree; but there are a few opinions on some of which, from the data given, we are sceptic, and from some others we dissent, *e.g.*:—“I cannot, however, withhold the conviction that years of observation has only tended to confirm, that the moment a nerve becomes exposed the sooner it is destroyed and extracted the better for the comfort of the patient.”

The “Notes” are written with some amount of scientific accuracy, and there are few men to whom their perusal will not be interesting, if not instructive.

Notes and Queries.

In answer to question No. 1 (Notes and Queries) in May number of MONTHLY REVIEW OF DENTAL SURGERY as to what is the best manner of keeping our forceps and instruments in general from becoming rusty, I find by experience that the best thing to be used is a mixture of almond oil, methylated spirits, and prepared chalk to be used on a piece of wood. Excavators, &c., must be rubbed with it every day.

Ol: amy: dil: 3i
Spt: vini methyl: 5ij
Cretæ ppt: ij

J. S.

No. 3.—Has it yet been definitely settled that the working up of

amalgam fillings in the palm of the hand is injurious? I have been in the habit of doing so for the past few months and am at present suffering from neuralgic pains and a slight loosening of one or two teeth. Is it possible that this is a case of cause and effect?—W.B.

No. 4.—I am often at a loss as to what is the proper and best practice in the case of the front teeth of patients unable to afford a Gold filling. Amalgam discolours, Osteo perishes.—INQUIRER.

No. 5.—A: "Young Practitioner" inquires if it is not unusual to give credit in the Dental Profession, he having been under the impression that cash payments were the rule.

LONDON DENTAL HOSPITAL.

CASES TREATED FROM MAY 1ST TO MAY 31ST, 1877.

Extractions.	Children under 14	...	...	...	483
	Adults	...	...	...	731
Under Nitrous Oxide	...	...	...	...	177
Gold Stoppings	...	...	...	...	314
White Foil ditto	...	...	...	...	87
Plastic ditto	...	...	...	...	490
Irregularities of the Teeth treated mechanically	...	...	...	...	45
Miscellaneous Cases	...	...	...	...	303
Advice Cases	...	...	...	...	89

Total ... 2719
JOHN ACKERY, *Dental House Surgeon,*
Pro tem.

THE DENTAL SURGEONS ATTACHED TO THE VARIOUS HOSPITALS OF LONDON ATTEND AS FOLLOWS:—

Dental Hospital of London	...	Daily, 9 a.m.
National Dental Hospital	...	Daily, 9 a.m.
Charing Cross	...	Mon., Wed., Fri., 9 a.m.
*German	...	Thur., 10 a.m.
*Great Northern	...	Wed., 2 p.m.
Guy's	...	Thursday, 12 noon.
King's College	...	Tues., Fri., 10 a.m.
London	...	Tues., 9 a.m.
Middlesex	...	Daily, 9 m.
St. Bartholomew's	...	Friday, 9 a.m.
St. George's	...	Tues., Sat., 9 a.m.
St. Mary's	...	Wed., Sat., 9 a.m.
St. Thomas's	...	Tues., Fri., 10 a.m.
University College	...	Wed., 10.30 a.m.
*West London	...	Tues., Fri., 9.30 a.m.
Westminster	...	Wed., Sat., 9.15 a.m.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of Messrs. SMITH, ELDER, & Co., 15, Waterloo Place, Pall Mall.
All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4, Crane Court, Fleet Street, E.C.

THE MONTHLY REVIEW

OF

DENTAL SURGERY.

No. II.

JULY, 1877.

VOL. VI.

The Royal College of Surgeons and the Memorials.

THE human mind is not infallible; neither are institutions which have for their units human minds. As there are minds of different degrees of correctness—a greater ability for one mind more than another to grasp the data of a sociological problem—so are there societies or bodies of men which, being the aggregates of their individualities, have a power for good according as that power is possessed by their units.

The Committee appointed by the Council of the College of Surgeons to consider the petitions lately presented to that corporate body from the Association of Surgeons practising Dentistry, and from the Licentiates, have made their report, and recommend “that the Dental Licence should in itself be deemed a sufficient qualification to enable the holder to undertake the appointment of Lecturer on Dental Anatomy, Dental Physiology, Dental Surgery, or of the post of Surgeon to a special Dental hospital or the Dental department of a recognized hospital.”

Not only does the report reject the petition of the Association, but the Committee deem it “expedient that certificates should not in future be received from Teachers unless, in addition to any other qualification they may possess, they also hold the Licence in Dental Surgery of the College:” A qualification which many members of the Association do not possess—a qualification which the peti-

tion of the Association tacitly ignored, inasmuch as it prayed "that any duly qualified surgeon holding the Membership or Fellowship of the Royal College of Surgeons, or any other Registerable Surgical Diploma, shall be entitled to sign schedules or certificates for those who require them for the Dental Licence," and

"That the non-possession of the L.D.S. Diploma should not interfere with the rights of Surgeons in practice as Dentists to hold Dental appointments at hospitals."

This recommendation of the Committee is a source of much satisfaction to those who have the interests of the L.D.S. at heart, inasmuch as the value of that qualification is fully estimated, and is placed "first and foremost for the Dental Teacher and Practitioner"; and furthermore, that the standard of the examination should be increased.

The axiom with which we set out applies to the Council of the College as well as to the Association. Notwithstanding, it must be admitted that greater relative wisdom is displayed in this instance by the Committee than was contained in the petition of the Association. Though undoubtedly the Association desired to raise the standard of qualified dental surgeons, and consequently of the profession, an object all coincided with, yet the manner in which they sought to accomplish that good intention was open to serious objections. It is admitted that legislation to be effectual, to be good, must have a relation to the nature of the humanity—"that truly good legislation and administration can go along with a humanity not truly good, is a chronic delusion." Admit the truthfulness of this, and admit an urgent necessity for the petition of the Association as a whole, and we tacitly admit the correlative impotence of the petition. The true way to advance the profession is by providing educational facilities at least in the provinces—say Liverpool or Manchester—and in Scot-

land and Ireland, by establishing dental schools in those centres; and were the petition of the Association granted, this most important factor for good would be blasted, because dental teachers possessing registerable qualifications could not at present be had in those centres.

The petition of the Association is tantamount to their empirically treating an effect while they make no effort to combat with the cause. The Council of the College of Surgeons wisely dug round the root of the tree and made the preliminary examination imperative; and we are persuaded that the branches which will in due time be forthcoming subsequent to the working of that political movement, will see the advantages of possessing the double qualification, and also the comparatively little extra work required to accomplish them, they having surmounted the great barrier to many possessing the L.D.S. only.

The Report and recommendations of the Committee were received at the Quarterly Meeting of the Council of the College, held on the 12th inst. After a long and animated discussion, the question was left *sub judice*.

This expression of opinion in high quarters, and especially if the recommendations be adopted by the Council, will be a great impetus for the good of the L.D.S. which will, we trust, radiate from the College of Surgeons of England and not be spent before it reaches the Colleges of Surgeons of Scotland and Ireland; and that the necessity for those bodies instituting dental examinations and diplomas will be met by their supplying the demand. Meanwhile, let us await the working of those educational factors which have already been established, and which we have pointed out as desirable, before we pray in the words of the petition of the Association of Surgeons practising Dentistry, which was premature, impolitic, and impotent.

The Month.

THE NATIONAL DENTAL HOSPITAL AND COLLEGE.

THE London correspondent of *Johnston's Dental Miscellany*, who signs himself "your faithful VAGRANT," writes the following in the June issue:—

"The school attached to the National Dental Hospital in Great Portland Street has advertised its course of lectures for the summer session. It is a small affair, but, as is not uncommon in such circumstances, it has assumed a big name, and has all at once become a college. 'The National Dental Hospital and College' looks big on paper, and any one who has a small sense of congruity may be inclined to smile when he sees the place so designated. It is in opposition to the Dental Hospital of London and the school attached to it. I hope the time may come ere long when it will be found useful. At present its projectors do not depend so much upon its being required as upon its cheapness. They have made their fees lower than the parent school, which to my mind is a sign of weakness. A cheaper article generally means an inferior one in the matter of education, where so much direct personal attention is required."

We regret that Vagrant's judgment should be warped by a petty jealousy which, to [say the least, is unfortunate, when the statement emanates, as in this instance, from a lecturer of the so-called "parent school."

We do not find fault with fair, open criticism, but in reply to Vagrant's sense of incongruity between the title and the "place so designated," we would suggest that he should cultivate a greater comprehensiveness, which would help him to lay hold of the complex factor which is at bottom of all society which has advanced beyond its embryonic state; to see a "congruity" between results, or the manner in which results are sought to be effected, and the individual teachers; to see the incongruity between the tacit upholding of the L.D.S. in the early part of his letter, and the avowed "weakness" and "infirmity" of the L.D.S., tacitly implied of the teachers in the National Dental Hospital and College.

At this time when so much is being said about raising the "standard of the profession," and Vagrant's voice is not the quietest (vide report of Leeds Meeting), we deeply regret that one of his position should state, even unconsciously, that which is not true. It has already been mentioned in our pages that the promoters of the National Dental College "do not wish it to be thought that, in carrying out their object, they

rival the London School of Dental Surgery in any other sense than does one Metropolitan Medical School rival another ;" yet, withal, Vagrant says it is in "opposition to the London Dental Hospital and the school attached to it." Again, "they have made their fees lower than the parent school." The fee for two years' practice at the National Dental Hospital has been £12 12s. since its establishment in 1861 ; and £12 12s. was the amount of fee for the lectures at the old Metropolitan School of Dental Science, of which the National Dental College is but a resuscitation.

THE "LANCET" ON DENTAL REFORM.

It is desirable that the medical profession generally should understand with some degree of accuracy the nature of the dispute which has been carried on of late between the two sections into which the dentists of this country are divided. The divergence in sympathy and instinct between these two bodies is very great, and their line of conduct has become antagonistic ; and since this antagonism involves such important matters as the relation of their profession to the Royal College of Surgeons and the separate Government registration of their qualifications, it must be conceded that the present juncture is one of serious importance to the dentists themselves, and not without grave interest to all the other branches of the medical and surgical profession, with which dental surgery is, and ever must be, intimately associated. The dentists in this country constitute a very numerous, and now an important body, including among them many persons of thorough education, and some of substantial scientific attainments. But, as we have said, they are divided into two sections, with strongly divergent views, and such opinions as allow us, for the convenience of subsequent reference, to define them as the "dental surgeons" and the "dentists ;" those, that is to say, who consider their profession as a branch of surgery, and those who regard their calling in its mere mechanical aspect.

The first serious effort in this country to raise the practice upon the teeth from the barber and his ally was made by Hunter himself, and from his time there has been an ever-increasing tendency to associate that branch of the healing art, both by education and by attainments, with surgery and medicine. This movement has reached such proportions that some twenty years since the College of Surgeons determined to grant a separate licence to practise "dentistry," for gentlemen who had not the means or the opportunity of taking the membership of the College, and which, by surgeons practising as dentists, might or might not be added to their surgical diploma. But it was never held, either by the College of Surgeons or, at the time of its foundation, by anyone else, that this licence (not a diploma, as it is often erroneously called) should be taken as a substitute for higher surgical degrees, or as a means of discouraging such qualifications.

Now this is the point upon which the present difficulty has arisen, and which has divided the dentists in this country into two antagonistic sections. The dental surgeons, as a body, desire to elevate their profession, and to keep it at as high a position as possible, to claim for it the same rank and the same educational requirements as ophthalmic, orthopædic, or aural surgery; and, while accepting and fully recognising the value of the licentiate'ship, aspire to and encourage full surgical culture and diplomas. On the other hand, the dentists consider the L.D.S. a sufficient and the only desirable qualification (though a large proportion of their party have not even taken this modicum of title), and indirectly discourage the membership or fellowship of the College, and to support which doctrine they now seek to obtain from the Legislature a separate registration, to be shielded beneath the pages of the Medical Register under a new Act which they have sketched out, and to the absurd propositions of which we shall refer further on.

From what we can gather, it appears that the discord was initiated by the introduction at the Dental Board of a motion, the effect of which was to render the L.D.S. a *sine quâ non*, and the only necessary qualification for teaching and holding dental appointments at general and special hospitals. We will not stop to inquire into the remote origin of this proposal, but we very much doubt if its drift and intention were clearly appreciated by the whole Board. It was, however, carried in a modified form, and afterwards adopted by the Council of the College.

This was the thin edge of the wedge, which the surgeons practising dental surgery were not slow in discovering; and though they have been blamed for memorialising the College of Surgeons on the questions involved, their prescience is vindicated by subsequent events: the separate registration scheme, and what it brings with it, are exactly the fruits which were anticipated.

What the dental surgeons desired to accomplish in sending their memorial to the College of Surgeons was that the education of the candidates for the L.D.S. should be entrusted to thoroughly qualified teachers, and to effect that object they suggested "that no schedule should be permitted to be signed by any lecturer on dental anatomy, physiology, or surgery, who does not hold the Membership or Fellowship of the Royal College of Surgeons, or at least some surgical diploma entitling its possessor to registration under the Medical Act."

This is of course a direct implication that the gentlemen who hold the licence to practice dental surgery are not the best qualified to teach others who desire to obtain the licence hereafter, and the question arises, Is this or is this not true? We are inclined to think that upon this point there can be no doubt; it is freely stated on the one side and admitted on the other that the attainments of the candidates for the L.D.S. at the College are, with some few exceptions, below a high standard, and that they are particularly deficient in those general medical matters of education which fit them to be lecturers. As this question in all its bearings is to be inquired into and judged of by a Committee from and of the Council of the Royal College of Surgeons, we would suggest to the Committee that a reference to the written papers of those who have taken the licence, which we believe are retained among the archives at the College, would enable them to say how far those persons are qualified to be the teachers of others. It is not in any unkindness that this allusion is made: the

injury comes from those who would place the licentiates in a position for which they are not fitted, and who thus compel us to make this reference.

We now, in conclusion, come to the question of separate registration for the L.D.S. In this scheme, its authors, in their opposition to the dental surgeons, have shown their hand completely. Every card is now in view, and, unless we are vastly mistaken, a revoke is inevitable. Whether we look at the manner in which it has been brought forward, or its object, it is difficult to speak of the project in terms of moderation, and we are, if possible, still more surprised at the impolicy of propounding such a design at the present juncture. The scheme involves separate registration for a single branch of surgery. If this is once permitted, where is it to end? If the dentists are to have separate registration under the medical act, why not the ophthalmic and the aural surgeon? And who shall define the scope and limit of the several specialities? The authors of this intended new Registration Act have already drawn its clauses, and have left no point in doubt. Not only is it protective as regards the holders of the L.D.S., but it is prohibitory, and that offensively so, against all surgeons, all Members and Fellows of the English College, those who hold like degrees from Edinburgh or Dublin, and all Masters of Surgery from the Universities. This one narrow field of the healing art is to be held sacred to the monopoly of the gentlemen who, after a slender examination, hold the licence to practise as dentists, and that from the English College, who alone grants it; and if any, even the most accomplished surgeon, both by attainments and diploma from either of the colleges or universities, chooses to practise on the diseases of the teeth, he is to be liable to prosecution and fine, and to be incapable of recovering his fees. One other provision reads like an ill conceived satire, but it is seriously intended, and that is the practitioner's title. If a surgeon elects to practise the surgery of the teeth, he is not to call himself a dental "surgeon" under legal penalties, but the licentiate is to do so though he is no surgeon at all!

Most remarkable of the whole is the singular indecorum and bad taste with which this registration scheme has been put forward. Whatever the licentiates in Dental Surgery may be, they owe it all to the College of Surgeons, and are under deep obligation to the College; yet they have launched this project without any communication with the Council of the College, in defiance of its authority, and in violation of its well known convictions on the subject of special registration. Meanwhile, it is with the principle of the reform proposed and the aim which all worthy practitioners in dentistry have in view, however much they differ amongst themselves, we are interested. Dentistry being a branch of surgery, we contend that those who practise the art must be surgeons first and dentists afterwards. In short, their special qualification should be supplementary to that which gives the right to practise surgery.

THE IRISH DENTAL DIPLOMA COMMITTEE.

Just on going to press we learn of the great success of a meeting of the Irish Dental Diploma Committee, held at Bristol, on Saturday the 14th inst. Mr. Wood, of Brighton, occupied the chair.

DENTAL MATERIA MEDICA AND THERAPEUTICS.

By JAMES STOCKEN, L.D.S., R.C.S.

ASSISTANT DENTAL SURGEON TO THE NATIONAL DENTAL HOSPITAL.

*(Prepared by desire of the Medical Committee of the National Dental Hospital).**Continued from page 9.***OLEUM CAJUPUTI.—OIL OF CAJUPUT.**

Botany.—The volatile oil of the leaves of *Melaleuca Minor*, belonging to the Natural Order *Myrtaceæ*. The Myrtle Order. Imported from Batavia and Singapore.

Physiological Effects and Therapeutics.—A diffusible stimulant, anti-spasmodic and diaphoretic. It is a medicine of much power and value. From the ordinary distilled oils (such as those derived from labiate plants and the umbelliferous fruits) it is distinguished by its strong influence over the nervous system, as evinced by its antispasmodic qualities and by the greater diffusibility of its stimulant properties. It is allied to valerian, between which and camphor it ought to be placed in a physiological classification, but in large doses it does not disorder the mental faculties as those medicines do.

In neuralgic affections it may be beneficially employed externally and internally, but its use is interdicted when the neuralgia is connected with an inflammatory action.

In toothache, a small piece of cotton saturated with the oil, and introduced into a carious tooth, is stated to be an efficacious remedy.

Dose.—1 to 5 minims.

OLEUM CARYOPHYLLI. OIL OF CLOVE.

Botany.—A volatile oil obtained from the dried unexpanded flower buds of *Caryophyllus Aromaticus*, belonging to the Natural Order *Myrtaceæ*. The Myrtle Order. Cultivated in the East and West Indies, Mauritius, &c.

Uses.—Aromatic and stimulant.

In toothache a drop or two upon cotton, introduced into a carious tooth, is a popular remedy which occasionally affords relief.

OLEUM CROTONIS.—CROTON OIL.

Botany.—Expressed from the seeds of *Croton Tiglium*, a native of India and Ceylon, belonging to the Natural Order *Euphorbiaceæ*. The Euphorbium or Spurgewort Order.

Physiological Effects and Therapeutics.—This oil is a drastic cathartic, and very speedy in its action. It is given in doses of from half to three drops.

Being uncertain in its action it should be used with caution, and avoided in cases of extreme debility, and in inflammatory affections of the digestive organs. In neuralgia, tic douloureux, and sciatica, it is said by some to possess a specific power, apart from its purgative action; also in tic douloureux arising from dyspepsia.

Externally, as a counter-irritant it may be diluted with Olive Oil or Soap Liniment.

Dose.— $\frac{1}{3}$ to 2 minims in the form of pill, or placed on the tongue.

OLEUM MORRHUÆ.—COD LIVER OIL.

Preparation.—It is extracted by a steam heat not exceeding 180°F from the fresh liver of the cod (*Gadus Morrhua*) and others of the family *Gadidæ*.

Physiological Effects and Therapeutics.—In scrofulous and tubercular diathesis, and the various diseases in which this state of the constitution manifests itself, Cod Liver Oil is a remedy from which we may, as a general rule, anticipate the greatest good. It is a valuable adjunct to arsenic, &c., in scrofulous affections of the joints and bones, and is a remedy on which the greatest reliance may be placed.

In rachitis Dr. Bennett considers it the most efficacious of all remedies. Many forms of neuralgia which resist quinine and other ordinary remedies, will sometimes yield to the plentiful ingestion of fat as an article of diet. Of these fatty remedies, cod liver oil holds the highest rank.

It should be administered immediately before or after meals, and may be given with orange wine, or a mixture containing tincture of orange, and a little phosphoric or nitric acid—in hot milk, or coffee, or in the form of capsule.

According to Dr. Ringer a little salt taken immediately

before or after the oil, often removes the taste and prevents nausea.

Dose.—1 dr̄m : to 1 ounce.

OPIUM.—OPIUM.

Botany.—Obtained from the *Papaver Somniferum*, an annual belonging to the Natural Order *Papaveraceæ*. The Poppy Order.

Preparation.—The juice is obtained by incisions from the unripe capsules of the opium poppy, and inspissated by spontaneous evaporation.

Physiological Effects and Therapeutics.—In sciatica, tic douloureux, and other neuralgic affections, opium internally administered and locally applied, is occasionally of great service; but both these modes are far inferior to morphia hypodermically administered.

In toothache a piece of solid opium or cotton saturated with the tincture or wine of opium, introduced into a carious tooth frequently affords relief.

In ptyalism, opium has been given internally with the view of arresting the excessive discharge. A case is recorded where a patient was profusely salivated; every means had failed to diminish the flow of saliva, until opium (gr̄i every 4 hours) was given, when almost immediately cessation of excessive secretion ensued.

Great caution should be observed in the administration of opium. It is interdicted in some diseases of the respiratory organs, &c.

Some persons are peculiarly susceptible to its action, and are unable to take even the smallest dose. Infants and children bear its exhibition badly, even two or three drops of the tincture have been known to produce a fatal result.

As a benumber or topical anodyne it is much inferior to aconite, hence in neuralgia the latter is greatly to be preferred.

PAPAVERIS CAPSULÆ.—POPPY CAPSULES.

Botany.—The nearly ripe dried capsules of the white Poppy, *Papaver Somniferum*, belonging to the Natural Order *Papaveraceæ*. The Poppy Order.

Uses.—Anodyne in fomentations. Two ounces to a pint and a half, boiled to one pint.

PEPSINA.—PEPSINE.

Characters.—A light yellowish-brown powder, having a faint, but not disagreeable odour, and a slightly saline taste, without any indication of putrescence. Very sparingly soluble in water or spirit. It is decomposed at a temperature of 120°F., and then loses its digestive properties.

Mr. Oakley Coles recommends it as an agent capable of restoring to a healthy condition a suppurating pulp. The pepsine should be fresh, and made into a paste with water, containing two per centum of Hydrochloric Acid, it is then placed in contact with the diseased pulp, sealed with wax and renewed every third day. He asserts that, after a few applications, the offensive secretion ceases, and the pulp assumes a healthy condition, the dead part having been digested.

POTASSÆ BICARBONAS.—BICARBONATE POTASH.

Synonym.—Acid Carbonate of Potassium.

Formula.—Old: $\text{KO}, \text{HO}, 2\text{CO}_2$. New: KHCO_3 .

Characters.—Occurs in colourless right-rhombic prisms which are not deliquescent, having a saline, feebly alkaline taste.

Preparation.—By passing carbonic acid gas through an aqueous solution of carbonate of potash until crystals of the bicarbonate are formed, these are washed with twice their bulk of cold water, drained and dried (on filtering paper) by exposure to the air.

Physiological Effects and Therapeutics.—An antacid and diuretic. A dilute solution of this salt is very serviceable as a mouth wash where acid medicines are being taken. Also by women during the period of pregnancy, when the secretions of the mouth are frequently found to be unusually acid.

It is very beneficial in glandular diseases; excessive enlargement of the lenticular and glandular papillæ at the base of the tongue, and is a valuable agent either alone or in conjunction with iodide of potassium, in rheumatic tooth-ache.

The Homology of the Dental Tissues, their Susceptibility to Suppressive Economy, and their present Degeneracy in Man.

BY A. H. THOMPSON, D.D.S., Topeka, Kansas.

PART III.—PRESENT DEGENERACY IN MAN.

THE fact of the degeneracy of the tissues of the teeth of contemporaneous man of the current age from a perfect type requires neither demonstration nor reiteration. To every dental surgeon it is a matter of every-day observation in the treatment of dental lesions, and to nearly every member of the human species it is a matter of subjective experience,—too often, indeed, made apparent by the acute suffering of which it is the cause, and the inconvenience it occasions by the loss of the teeth.

The query of *why* this should be so is probably as old as history. Defectiveness of the teeth, indeed, antedates written records, although such phenomena of disease as they present in human remains found in pre-historic sepulchres are more infrequent than occur in savage tribes to-day, and are but a fraction of that manifested in civilized nations of our time. There has been progressive increase in diseases of the teeth in man since primitive ages, with more or less fluctuation in the rate of progress, until at the present time the aspect that meets the eyes of the dental profession is appalling and distressing, so extensively disastrous have dental diseases become.

This condition must be largely due to mere deterioration of dental structure, to a defectiveness of tissual organization, and although abnormal oral fluids are an important factor of dental disease (and their deleterious influence is great), it is an important fact that good tooth-structure is almost impregnable. Of course dental defectiveness and aggressiveness of the abnormal oral fluids are usually found together, and also good tooth-structure and normal fluids. Yet it is widely observed that teeth of good innate organization rarely succumb to any condition of abnormal saliva that may supervene after their eruption. Most of the apparent exceptions that occur to this rule will be found to be with teeth of defective organization, and the cause of their destruction to have been the same as that of the most apparent case—a difference in degree, but not in kind, of disease. It is fairly demonstrable that the destructive diseases of the teeth of man to-day, and especially caries, are mainly due to defective tissual organization.

In the investigation of the *cause* of this deterioration of dental

structure we enter a field filled with controversy, and where truth is yet a stranger. If the cause were once known, it is safe to say that a remedy might be found which, if extensively applied, would bring alleviation of the suffering and inconvenience that have ensued, and confer appreciable benefit upon the race, though it could scarcely cure the evil entirely. But far from this as yet having been the case, or the current being even guided in its course, the destruction progresses with increasing ratio and rapidity. It is within the memory even of a generation yet living, when the general condition of the teeth was much better than is to be found to-day, except in a few individuals, and a century ago scarcely a third of the disease now prevalent existed. The cause of this precipitous deterioration and destruction has baffled all investigators and theorists. It has fallen like a catastrophe, and like a besom of destruction that regards no barrier placed in its path, threatens to sweep the teeth from man within a few centuries, if it should maintain the ratio of increasing speed exhibited during the last hundred years. Whence it has come, why it should be, and whither it tends, are problems which we can only contemplate with a feeling akin to despair, for no human power seems capable of answering.

Contemporary professional thought is almost unanimous in attributing this deplorable condition of affairs to the deficiency of calcium and magnesium salts, particularly the former, in the organic structure of the tooth. These minerals going to harden the dental substance, their deficiency and absence permits solution of the enamel and dentine by acidulated oral fluids, and the disintegration of the entire tooth-body in the disease called caries. The deficiency of these salts is due, it is claimed, to an insufficient supply of foods containing them during intra-uterine existence, infancy, and childhood. The one food which is said to contain the most of these vital mineral constituents is that derived from employing the whole grain of wheat, oats, etc., the outer part of the grain, which is bolted away from the inner part in making fine flour, containing the largest amount of calcium and magnesium salts. This separation of the parts of the grain deprives the human system of the mineral salts, and the teeth are in consequence deficient in inorganic material, and fall a ready victim to caries. It is scarcely too much to say that this theory is to-day the prevalent opinion in the dental profession as to the cause of the present degeneracy of the dental tissues in man; but while there is an appreciable amount of truth in the hypothesis, it has, most probably, been carried to an extravagant extreme in the ultra claims that have been made for it.

We feel safe in asserting that, if the people of the United States were compelled to use unbolted flour bread, oatmeal, &c., for ten generations, which would give ample opportunity for the display of the merits of the treatment, the destructive career of caries of the teeth would not be stayed. That there would be some effect for the better we willingly concede, for any strict and wholesome regimen would be beneficial, and this one would possess, though in a much smaller degree than is claimed for it, its special merits. The claim that the whole fault of the present degeneracy of the teeth is due to this cause can scarcely be entertained as conclusive. The experiments that have been conducted in the interests of the theory are inconclusive from being too limited and incomplete. Slight benefits have, of course, followed the employment of the regimen recommended as the one and only remedy, because there is a modicum of merit in it for the purpose, and the food is wholesome and useful. Yet to expect a complete revolution of existing conditions by the method is out of the question.

Special dieting can, of course, bring about particular results in many species of animals, as has been demonstrated, but physiological science has not reached the point where certain results can be promised with mathematical accuracy from the employment of any given kind of food. In this we think the supporters of the unbolted flour theory are at fault; they claim what science has not attained.

(To be Concluded.)

Meeting of Dentists at Leeds.

SATURDAY, JUNE 30, 1877.

A MEETING of the Dental Profession took place at the Queen's Hotel, Leeds, on Saturday, June 30th. The meeting was the first of a series arranged by the Dental Diploma Petition Committee, to be held in various parts of the country, in order that the proposed scheme, which has been approved by many leading practitioners in London and the provinces, may be fully brought before the profession, and thoroughly discussed.

Amongst those present were James Harrison, Esq., Sheffield; F. J. Vanderpant, Esq., Kingston-on-Thames; John O'Duffy, Esq., Dublin; George Brunton, Esq., Leeds; D. A. Wormald, Esq., Bury; T. Murphy, Esq., Bolton; Sidney Wormald, Esq., Stockport; J. H. Benham, Esq., Leeds; G. H. Walshaw, Esq., Scarborough; W. H. Waite, Esq., Liverpool; W. Memmot, Esq., Sheffield; J. S. Turner, Esq., London; S. G.

Rhodes, Esq., Leeds; G. Biltcliffe, Esq., Dewsbury; S. Mawson, Esq., Bradford; J. Naylor, Esq., Leeds; J. M. Mantin, Esq., Wakefield; John Laws, Esq., Bolton (Hon. Sec.)

Mr. J. HARRISON (Sheffield) moved that Mr. James Smith Turner, of London, should take the chair. In doing so, he spoke in terms of praise of the position which Mr. Turner occupied in the profession.

Mr. G. BRUNTON (Leeds) seconded the proposal, not only on account of the name, prestige, and character of Mr. Turner, but because he was a gentleman who was thoroughly acquainted with the subject which was to come before them that day; and he believed that one who knew the water would be the best pilot.

The motion was then put and adopted, and Mr. TURNER took the chair.

The CHAIRMAN said: I feel a certain amount of diffidence, after what has been said, in appearing before you. However, I am here as I am. We know the object of our meeting here. It has always been the privilege of Englishmen to help those who are striving to help themselves, and it is our privilege and our duty to help our brethren in Ireland, who are striving to do what many of us have striven for many years in England to do—to advance the social position, the educational position, and the qualification of Dentists. Our brethren in Ireland have undertaken a difficult and intricate task, but one which I believe they will succeed in if they work patiently, and are supported by their brethren in England and Scotland. The object of our meeting is to support the Dentists of Ireland in obtaining a Diploma—a Dental Diploma—from the Royal College of Surgeons of Ireland. With these few remarks, I beg to ask Dr. Waite, of Liverpool, to move the first resolution.

Dr. W. H. WAITE (Liverpool) said: The resolution that has been put into my hands is as follows: "That we hail with satisfaction the efforts that are being made by the Dentists in Ireland to induce the Council of the Royal College of Surgeons of Ireland to institute a Dental Diploma, and we pledge ourselves to give them our cordial support." It affords me very great satisfaction, sir, to attend a meeting of our profession in this Yorkshire metropolis. I suppose that Leeds stands pretty much in the same relation to Yorkshire that Manchester does to Lancashire, and so it is at least very appropriate and also encouraging, that the challenge which Lancashire has given should be so early and so heartily accepted by Yorkshire and the Northern Counties. And I hope that other districts will very soon follow the example which has been set. I think it augurs well for the success of our movement that the two largest counties in England are the first to be in the field. For many years I have been convinced that no substantial improvement was likely to be effected in our position until we provincials, who are in reality the great majority

in the profession, roused ourselves, and took vigorously in hand the great work of Dental reform. Our brethren in London have very materially improved their position during the past twenty years, and they have done so by dint of perseverance, forbearance, and united action. Their facilities, of course, are very numerous and great; but, nevertheless, what they have done we can do, in part at least, if we are as resolute and united in our aims. In the past, our mistake has been to sit listlessly expecting that some day or other London would do something to benefit the provinces. Instead of this, I think we ought to have followed the example which London has set us, of gathering ourselves together as members of a common calling, endeavouring to improve one another, and thereby elevating and purifying the whole body. Well, it has been a difficult and laborious task to break in upon the deadly inactivity and indifference into which we have lapsed; but the ice having been broken, I make no hesitation in averring that we shall deserve to sink lower and lower in public estimation if we do not now take up the work of reform, and determine to give ourselves no rest until it is thoroughly carried out. As that is a work in which every individual is interested, so every individual ought to contribute his share, according to his ability; for I hold that we have no right to expect advantages towards the securing of which we are unwilling to make any effort. The point I wish to impress upon you is this:—that whatever improvement is to be effected in our position, as a profession, depends for its execution not on any particular set of men, but upon the combined energy and perseverance of the whole mass of practitioners. History records the folly of supposing that any party can successfully legislate for the whole body. The English Diploma was established with the very benevolent design of benefiting the whole profession: but it has been robbed of its good intention, so far as the great majority are concerned, because its details were arranged upon too narrow a basis. The promoters fell into grievous mistakes, not through wilful disregard of provincial interests, but from ignorance of the circumstances and exigencies of country practice. Because of this, as you are all aware, the English Diploma is now edged about with a number of provisions, some of which are positively insulting to men of ability and average skill. There is but one method of avoiding similar blunders, and that is by organising the whole body of practitioners, so that the peculiarities of country practice, no less than the facilities belonging to residence in large cities, may all be taken into account in any scheme that may be inaugurated. I should like to put before you the state of the case as regards the English Diploma, because it furnishes one of the strongest arguments in favour of the scheme for the furtherance of which we are met together this afternoon. By a very few facts I can let you see, as well as it is possible to do, how the case stands. There are in Great Britain and Ireland upwards of 2,000 men practising Dentistry. The English Diploma was first instituted in 1859. During the first four years following that time—between 1859 and 1863—240 gentlemen were admitted to the Diploma on payment of the fee, and passing a formal examination. During the same period—and I ask you to note this especially, for there lies the root of a great deal of bitterness—during the same period a large number of practitioners, especially in the provinces, were refused admission to the examination, and in some cases at least, no reason whatever was assigned for their refusal, and no prospect was afforded of their being

admitted at a future period. Since 1863 there have passed through the curriculum 129 students, who have taken the Diploma, being an average of 9 per annum, making a total of 369 gentlemen who have received the Dental Diploma, according to the latest published list. Of these 369 there are residing in London and neighbourhood 172, leaving for the whole of the provinces of Great Britain and Ireland 197. About three or four years ago an effort was made to obtain some relaxation from the College of Surgeons on behalf of gentlemen who were in practice prior to 1859, but who, from any cause, had failed to obtain the Diploma during the first four years. That effort has resulted thus:—First of all, no one is entitled to apply for admission unless he was in the profession before 1859, so that all who have commenced since that date are absolutely excluded, unless they go through the curriculum. Secondly, of those who are entitled to apply, none will be admitted to the examination if they have issued any kind of advertisement since 1859; and last, but not least, any who may be admitted will be expected to pass the same examination as that allotted to students, per curriculum. In other words, out of 2000 practising Dentists, 369 have been admitted to the Diploma, and the remainder are practically shut out. 'This we feel to be an injustice. Latterly, a new phase has come over the question. The licentiates are being paraded before the public as the only qualified Dentists, the remainder being of course dubbed "unqualified." Now that is a statement in support of which I might produce a good deal of evidence, but it is unnecessary to refer you to it in detail. I simply remind you of the case which has appeared in the *Dental Review* for the current month, the copy of an advertisement which has been issued in London,—the south and south-east districts—setting forth the names of those who are distinctly stated to be the only qualified dentists in these districts. For my part, I cannot but feel that this is adding insult to injury. We have a right to protest against the insult and the injustice; but, at the same time, it will answer our purpose far better to seek to remedy the evil by obtaining for our unqualified brethren legal recognition in some other quarter. At present the public have no means of discerning between the man who has been properly trained and the man who has taken up Dentistry merely as a trade. Our contention is that if the English Diploma had been fairly and generously distributed between 1859 and 1863, upon reasonable terms, it would have come within the reach of every respectable practitioner in Great Britain, and long ere now it had become the distinction between the educated and uneducated. As things are, it marks no such distinction; nay, it does not even mark off the non-advertising class, for the list to which I have referred contains the names of notorious advertisers; and unless there is a change, a generation must pass away before the English Diploma can supply the public with a reliable test of competency. Now, it may be asked, how do we propose to meet this public requirement? The answer is simply this—by endeavouring to arouse an interest in the matter in the minds of our brethren throughout the country, and through them endeavouring to assist our friends in Ireland in their efforts to induce the College of Surgeons of Ireland to institute a Dental Examination and Diploma upon reasonable terms; and we hope in doing this we shall be able to bring the qualification within the reach of every competent and respectable practitioner in the three kingdoms. This is the object to which we invite your attention and cordial support. With-

out the hearty concurrence of the profession, nothing can be accomplished; but with your help, and the help of our other brethren, we hope to inaugurate a new era in the history of provincial Dental politics. "Quackery," it has been said, "fattens on ignorance." If every educated practitioner bore a recognised title or stamp, the public would speedily learn to look for that title; and just in the proportion in which the public was thus educated, quackery would find its supplies diminishing. Our duty to the public, therefore, as well as considerations of a more personal character, should, I think, constrain us to strive for the attainment of a qualification. Bad as our condition is to-day, gentlemen, it can be worse; and unless we bestir ourselves it will be worse. The exclusive spirit is not dead. I am informed upon good authority that there are now before the Council of the Odontological Society two propositions, to which I beg your careful attention. The first is, "That for the future none but qualified members of the profession be admitted as members of the society." The second is to the effect "That the society shall resume political action." Interpreting the latter by the light of the former it is not very difficult to conjecture upon what lines political action would move. Should these propositions be adopted, the unqualified members of the profession will not simply have another door shut in their faces, but may have arrayed against them the most powerful body in the profession. Nor is it difficult to foresee further steps which will be still more to their disadvantage, as for example, a proposal that no pupil shall be eligible for the L.D.S. examination, unless he has served his time with a qualified practitioner; and that no one shall be entitled to attend the annual dinner, &c., unless he be qualified. The result of all this, and its tendency, will be that by degrees every one who does not possess the qualification, no matter how long his standing may have been in the profession; no matter how highly respected he may be in his own neighbourhood; no matter what his abilities or knowledge may be, everyone who is stamped with the term "unqualified" will be quietly ignored, got rid of—in fact, consigned to the limbo of inferiority and insignificance. Now, gentlemen, if it be to your taste to drift towards such a goal, then by all means remain inactive and indifferent; but if otherwise, then, in the name of the committee, I would call upon you to help in producing a real awakening of our brethren throughout the country, and to join with us in a staunch and determined endeavour to provide every competent member of the profession with the opportunity of obtaining liberty from the reproach of being unqualified.

Mr. SIDNEY WORMALD said: Mr. Chairman and gentlemen,—I can assure you it affords me very great pleasure to be present at this meeting. I am pleased we have a gentleman from London to preside over us. I anticipated we should be honoured with a London gentleman, and that we should also have present a number of well-known and highly-esteemed friends around him to support him. I do not possess a capacity for public speaking like my friend Dr. Waite; therefore I shall be obliged to say what I have to say very carefully. Dr. Waite, in his able and eloquent address, has alluded to many points of immense interest to the whole profession. He has referred to the great work of Dental reform during the last twenty years, showing how much it has benefited those who have been blessed with a residence in or near London, and how little the profession in the provinces has shared those

advantages. It would be presumptuous on my part to attempt to follow Dr. Waite through his interesting speech; but taking into account the whole of it, I think it amounts to something like this, that the profession is in a most conflicting and unsatisfactory state, and that this arises in a great measure from the want of a proper regard for provincial interests, and of a desire to unite and elevate the whole profession. It must be obvious to all who have watched the progress of Dental reform during the last twenty years, that the great amount of good which has been done has been confined within very narrow limits—that no great effort has been made to extend that good upon a broad principle for the benefit of the profession at large. Much has been done, we know, but the much has been too much nursed, and narrowed, and confined within a circle. It is time now for the provincials to go in for an extension of the franchise if I may so speak. The time has arrived when the provincials must claim to have a voice in their own interests; and that voice must be lifted up throughout the United Kingdom, and heard to say, “We are anxious for the elevation of the whole profession.” The present condition of the Dental profession, to say the least, is unsatisfactory, and this certainly cannot long continue. Sooner or later some change must take place; and unless some decided effort be made upon a broad basis with a view to benefit the mass of the profession, some other movement will necessarily arise, and a separate body will be formed. This is a most undesirable object to anticipate, and one which none would regret to see more than myself; but every year seems to bring it nearer to our doors—not brought nearer by those who will be compelled to unite for such a purpose, but by those who are fully qualified to provoke or avoid such a deplorable state of things. I allude to those who are trying to adopt every means by which they may entirely shut out those whom they call unqualified from all privileges and positions pertaining to their profession by stigmatizing them as unqualified practitioners, and holding themselves up by every means to the public as the only qualified Dentists. The unreasonableness of supposing that the great mass of the profession will submit to be doomed to live and die ignored, and stigmatised as unqualified, is monstrous in the extreme; and no less absurd is it to suppose that the Diplomaed portion of the profession will out-run the non-Diplomaed portion of the profession. Even after we have obtained registration, which is the greatest and all-important question of the day to the profession, which I am pleased to say is not abandoned—for Mr. Fox will not forsake his child, neither will those who have their hearts in the work cease to labour for it until it is accomplished—I say even after registration, unless an effort is made to elevate the whole profession, the same deplorable state of things will exist for at least a generation. Mr. Chairman, the committee who have been elected to carry out this movement believe that, by endeavouring to assist our friends in Ireland and Scotland to induce the Council of the Royal College of Surgeons to institute a Dental examination and Diploma, upon terms which will be within the reach of all Dentists, it will tend to unite and elevate the profession. It is a work that will require all our efforts, and is well worthy of our energies. Those of us who have put our hands to this work have done so with the determination to accomplish our object. We have counted upon many difficulties, but we believe in the justice of our cause. We have come here this afternoon for the purpose of affording some information, and pointing out the lines of action, and asking for your

co-operation and support. Dr. Waite has alluded to Leeds as an important town, and compared it as being to Yorkshire what Manchester is to Lancashire. Now, Mr. Chairman, I am a Yorkshireman, and I believe they are a determined people. Once they espouse a good cause, they will support it through storm and sunshine. We have heard it said that a Yorkshireman won't submit or surrender, even when he knows he is wrong. The Yorkshire people are very quick of apprehension—next of kin to the Irish in that respect; therefore they will see the justice and importance of our movement at once. Let me ask you, then, on behalf of the committee, and for your own sakes, to assist the cause. Let us be united as one man, and take our stand upon the merits of our profession, and with one voice denounce with manly pride the demoralizing stigma, labouring to deserve a better and a nobler name. I have now much pleasure in seconding the motion so ably proposed by Dr. Waite.

The resolution was then put to the meeting and passed *nem con*.

The SECRETARY (Mr. Laws) said: Before the second resolution can be possibly put, it is necessary that the meeting should know something of what the committee is doing. When I was elected Secretary to this committee, I kicked very strongly against the appointment, as I am of opinion that a secretary should be a man who is at any rate a public speaker. That, sir, I assure you I am not; but I have to inform the meeting of what the committee is doing, and is about to do. First of all, I suppose every Dentist has received a copy of a report of the Manchester meeting, held on the 12th May, when it was unanimously decided to support the Dentists of Ireland in the establishment of a School of Dental Surgery there, and eventually to petition the Royal College of Surgeons to institute a Diploma. The petition will go from the Dentists of Ireland, but what they ask the Dentists of England to do is to support them. As has been so ably stated by Dr. Waite, the present Dentists in the provinces are debarred from taking the Diploma which is conferred by the Royal College of Surgeons of England. There is only one other way by which we can now obtain a Diploma—that is, by having Schools of Dental Surgery established in Scotland and Ireland. The movement that is at present set about is to institute a School of Dental Surgery in Ireland, and the Dentists of England are wanted to pledge themselves to support our Irish friends. In order to carry out this work the committee has decided that it shall be a thoroughly national movement, and shall have the colour of no clique or party, such as former movements in Dental polity have had. Consequently, they have decided to hold meetings in several parts of the country. This is the first meeting after the Manchester meeting. It was called on account of Leeds being a central place. This is meeting number one; and we are about, in a fortnight, to hold a meeting at Bristol, and, possibly in a month, to hold a meeting in Scotland, so that our Scotch friends cannot say they are left out in the cold. We intend also to hold another meeting in Norwich, so that we shall cover all quarters of Great Britain. What we are especially aiming at is to endeavour to stir up the provincial Dentists throughout the United Kingdom to look to their own interests. We desire to support our brethren in Ireland, who are doing such a good and noble work. That is all the statement I have to make in connection with what the committee has done. Reports of the meetings will, of course, appear in the

Dental journals, as they are held; and I only hope that the Dentists present here to-day will give us in their names for support, both nominally and monetarily.

The CHAIRMAN: We are indebted to our Secretary for what he has told us about the action of the committee. It will be for you, as for every other meeting, to say whether you will support the committee in their action. I think there can be but one answer to that question.

Mr. F. G. VANDERPANT (Kingston-on-Thames), moved the second resolution as follows, viz.: "That this meeting has heard with satisfaction the statement of the committee appointed at the meeting of Dentists held in Manchester, May 12th, and pledges itself to support the committee in the course which it has adopted." He said: I think there will be very little discussion necessary on that point. The Secretary, Mr. Laws, has given us a very satisfactory description of that meeting; and I can only trust that the other meetings which may be held, may increase in popularity as the purport of the movement becomes more widely circulated and better known. I am sure that it will have the support of all true members of the profession throughout the kingdom, and I trust it may be the means of consolidating and building us up into a compact body.

Mr. G. BRUNTON (Leeds) said: I have very great pleasure in seconding the resolution, and I am very sorry to see that the Leeds Dentists are conspicuous by their absence—that is, if we may take the number that are here and the number who are in practice in the town. However, the meeting has had a good start, and it is pretty well-known that it is not the majority that always does the work; it is generally the minority. A few good men will get through their work much better than a large number of people who are, perhaps, not united. A good deal has been said about the profession and the standing of it. I am not inclined myself to take such a gloomy view of things. I don't think we are altogether such bad boys as we have been painted. Of course, we have a good deal to contend with in the way of advertisements; but I think that those who act their parts well, will in the long-run carry the day, and advertising will become an obsolete thing, because the public are getting educated in the matter. As far as I am concerned myself, I am not particularly anxious that the English Dentists should push the matter of getting recognised; but I agree that they should heartily co-operate with and support their Irish brethren who are setting this movement on foot, and asking to obtain recognition from the Irish College. I am sorry that we have not got a larger gathering to-day; but I believe it is really owing to the meeting not having been advertised, as it was proposed to be, in some of the Bradford, Leeds, and Sheffield newspapers. It was to have been advertised, and perhaps that may account for the small attendance. I have very great pleasure in seconding the resolution.

Dr. D. A. WORMALD (Bury), supported the resolution. He said: I have very great pleasure as a member of the committee in supporting the resolution which has been moved by Mr. Vanderpant, and seconded by Mr. Brunton. I am sure that what has been said to-day, and the report of the meeting which will be circulated through the country in the *Dental Journal and Review*, will have a great influence in bringing our Yorkshire Dentists, and those in the Northern Counties, to support this movement. Already between 60 and 70 gentlemen have done so. Our

object in coming here to-day, and in trying to enlist the interests of Dentists in our large centres through the means of the great towns, is to have a movement, as our Secretary has told you, of a national character; to give every Dentist the opportunity of knowing what is going on, so that whatever may be our future with regard to this movement, we can say at least that we have given them a chance. If they don't go in and support us, then we cannot help it. We are working for those men who have made a position; and looking at the present state of dental politics, and the condition in which we have to fight, and make as it were our bread and butter, we are striving to give a recognised position to those who, by law and by the qualification which is now held, have none. And, gentlemen, surely we do not need to be told that a qualification is necessary in these days. Do not the exigencies of the time in which we live shew us that every day—although it may be slow—there is a gradual change coming over the public opinion of this country; the public press? The literature that has been circulated, the appointments which have been almost exclusively reserved for those who hold Diplomas, the support even of our medical confreres—all tend in the direction to educate public opinion that Dentists must have a qualification. We may be slow to accept this fact. The Dentists in the country who have a position may rest upon it, and think that their bread and butter is safe for their days. But still it is true that

“Freedom's battle once begun

Though baffled oft is ever won.”

And the progress of the Dental profession, amid all the chaotic darkness in which we are, is slowly and surely going on. The Dentists who are at this meeting, and those who are living in our great cities, and more especially in the North of England, know the difficulties that a local practitioner has to contend with; and surely it is important if they feel their position at all, in the growing numbers on the one hand of men of no account and no education whatever who may call themselves Dentists without the slightest training, and on the other hand, of qualified Dentists who are rapidly growing in numbers and influence year by year. I say, between these two bodies how are gentlemen who have not qualified to live and maintain their position at all? If they are to hold their own; if they must continue as they have done in the past to maintain that position, we must move with signs of the times; and upon that account I say it is their duty and their interest to go in and have a recognised position, and attain a qualified one. Again, we want a special Dental qualification, and when that is recognised by the law of the land it will be a passport to position for every good Dentist. As has been stated this afternoon, we are now trying to support our Irish Dentists in this movement, and to do that we must surely support the Hospital and College, which we expect will give it birth. I am sure those who wish well to their profession, and want to have a recognised position themselves, will come forward and support a movement like this—fraught with good to them; and, above all, to bring our profession into greater respect and into greater confidence and faith among the mass of the population. Look how many men conform to the laws of the Odontological Society—perhaps hundreds of them in this country—who are not allowed to advertise, and who try to uphold their professional status with dignity and

honour ; and yet, on the other hand, they are put on the same level, in the eye of the public, with anyone who chooses to be called a Dentist. We ask, then, in the interests of the profession, that you should support this movement, and try to alter this state of things. The mass of people in large manufacturing towns make no difference between the man who may conform to the laws of the Odontological Society and the new-fledged professing Dentist of a few months training. That education on the part of the public is a question of time ; and the way to make this Diploma, and give it an impetus to go forward, and be recognised as a qualification, is for us to support a movement like this, and get every intelligent Dentist who wishes well to his calling to come forward and support it. If we do that, we shall in a few years—within the lifetime of most of us—give such an influence to Dental qualification, that the public, as it becomes educated, will begin to look up to those who possess it. It will become the recognised Diploma of the land. Then our profession will come to the front, and we shall have gradually coming into our ranks, those who will uphold it with dignity and honour ; and we may be sure as it is now one of the most necessary, it will be one of the most important professions in the land. I will say nothing more but that I am sure, from the remarks made to-day, you know we wish well to our profession ; that the gentlemen upon this committee are striving to do their utmost ; that our position is not a bed roses ; that it means great sacrifice of time and labour to work for such a movement as this ; and I think it is very little to ask our brother professionals for their support to a movement which is fraught with such good to ourselves and benefit to our countrymen.

The CHAIRMAN : Allusion has been made to the paucity of numbers attending this meeting, but this is generally a busy time with Dentists, and it is not always easy for them to leave their practice at this time of the year. And if you consider that this movement is but in its infancy, you need not think that your numbers are few. It is within my recollection that it was almost impossible to get up a meeting of this size under any circumstances in any part of England, so that I don't think we need complain of the numbers who are here, but rather we should feel satisfied. I am perfectly satisfied that when you come to have another meeting in Bristol, it will be largely attended ; and so, when you come to have a meeting in Scotland, there will be an increase in numbers and strength. The proposal that is now before you is one of some importance. Every man who holds up his hand for it will pledge himself to support the committee in the action it has taken. The Committee has pledged itself to supply the Dental Hospital in Dublin with money to help to carry it on. Of course, it requires other monies besides the £100 that this committee has generously promised it ; but I think that this committee is doing well in helping the Dental Hospital in Dublin, because it will be a stand-point—it will be a strong reason, which can be laid before the College of Surgeons of Ireland to induce them to grant the Diploma which is to be asked from them.

The CHAIRMAN then put the resolution, and it was adopted.

The CHAIRMAN said :—Gentlemen,—At no period during my connection with Dentistry have I looked to the future of my profession with so much satisfaction as I do now. When I call to my recollection the struggles of the College of Dentists of England to make Dentistry something more than a name ; the efforts of the founders of the Odontological Society to

draw the members of the profession together for the "encouragement and diffusion of knowledge in Dental Surgery, and for the promotion of intercourse among members of the Dental profession;" and when I think of the ultimately successful efforts which were made to induce the Royal College of Surgeons of England to grant a Dental Diploma, and of the indifference with which those important movements were received by the great mass of Dentists—the timid and lukewarm support which they received from some, and the narrowminded, jealous opposition with which they were met by others, and compare those conditions with the anxiety which now pervades all ranks of Dentistry regarding every movement among its members; the readiness with which the majority acknowledge the necessity for a special guarantee of fitness to assume the name of Dentist, and the alacrity with which men are combining to help themselves to acquire this guarantee—I can hardly realize that I belong to the same profession. If we try to picture the chaotic state of Dentistry at that time, the supineness of the great bulk of the profession, the widespread dissensions which existed among its more active members, and the apparent helplessness of the whole body, I think that we must come to the conclusion that the Royal College of Surgeons of England did a bold and generous thing when they issued a Dental Diploma. In approaching this question we must try and look at it from other than our own special standpoint. The managers of all our licensing bodies have in their custody not only the varied interests of their members—some real, some imaginary, but all equally clamorous for consideration—but also the traditions, usages, and ancient privileges of corporate bodies—bodies which have to discharge a threefold duty—to themselves, to their members, and to the public; and when we consider the great reputation which the College of Surgeons of England possesses, and the large number of candidates for its Diploma which its high character continually brings before its Examining Boards, we must, apart from the legal difficulties which had to be overcome, give the Council of that body credit for making a very responsible experiment, and thereby adding considerably to their already onerous duties. We must acknowledge also that they behaved generously when they gave men in practice four years to consider the value of that Diploma, and offered them an examination without a curriculum. Unfortunately very few practitioners appreciated the value of the new diploma. This is an awkward fact, gentlemen, which we must look in the face. We are now on the threshold of a new campaign, and if we be wise we will well consider our position. It is idle to talk of not having appreciated the Diploma as if that were a virtuous act, and a decision which now merits consideration. The position may deserve commiseration; but the only consideration which the neglect of the Dental Diploma during the first four years of its existence can have, is that it was a mistake. Such mistakes are only too common in this life, as many investors in Turkish and Egyptian securities have recently found out. These people used their own judgment, and for some years had a good time of it; but the evil day has come, and I presume these people must abide by their mistake. So it is, and so it was, with the gentlemen in practice who neglected the L.D.S. offered to them during four long years. They invested their time and money and energy in practice. Rather than spare a little time and money—rather than forego an immediate increase in the number of their patients—they let their chance slip; and now we feel the mistake, and

have also learned that the time which could have been spared at a small sacrifice some 15 or 16 years ago, has become far more valuable and far more difficult to command. But, gentlemen, this neglected Diploma has been doing its work all this time. It has been making its influence felt throughout the length and breadth of the profession. It has been pressing us onward in the path of progress, not in "leaps and bounds," but by degrees, steadily and slowly. So imperceptibly, indeed, that some have despaired of seeing any good result; while others have been so impatient as to seek virtually to destroy it, and set up a golden calf in its place. But this meeting is the result of the establishment of the L.D.S. We now see that as a profession we made a great mistake in neglecting it; we have candour enough to admit it, and energy enough to try and find a remedy; and that remedy is to support our brethren of the sister island in asking respectfully, but earnestly, the Royal College of Surgeons of Ireland to grant a Dental Diploma, and to back up our support by the assurance that such a Diploma shall not be neglected, as was that of the Royal College of Surgeons of England twenty years ago. We all hope their efforts will succeed; and let us see on what grounds we have our hopes. The first ground of hope is that, as Dentists more and more acknowledge the necessity of a special education for their profession, there will be—and that before long, I believe—work for a Board of Examiners, not only in England but in Ireland and Scotland. The second position is, that it is a duty which the licensing bodies of the three kingdoms owe to those who wish to qualify as Dental licentiates, and to the public at large. It is unfair to compel a man who wants a Diploma to travel from one end of the country to the other, when all the machinery stands ready at his own door, only waiting to be adapted to his special purpose. I think it also desirable for an Irishman or a Scotchman to know and feel that his own country is in the van of progress, and that the licensing bodies at home are as enlightened as those elsewhere. The public also, as well as we ourselves, are beginning to recognise the necessity of having some special protection from ignorance and mendacity. People are beginning to look for and ask for a qualified Dentist—not a qualified surgeon, they already know where to find them; but a *bonâ fide* Dentist; and it is the duty of the governing bodies which are instituted for the protection of the public, to supply this acknowledged want. A further ground for hope is that the appointment of a Dental Examining Board will not be an experiment. The Governors who may take up the question have the experience of twenty years to guide them. Whatever has been useful may be initiated, and whatever has proved undesirable can be avoided. It will be no leap in the dark, but a clear, open path to an obvious duty. The leading London men are in its favour; and the absence of a Dental Examination and qualification was, a few months ago, held up as a reproach to both Ireland and Scotland by Mr. Vasey, in his valedictory address as president of the Odontological Society. The Council of the College of Surgeons of England is composed of men with minds too liberal, and with the cause of professional education too much at heart to desire anything in the shape of monopoly. The interest which they have taken in dental matters, and the desire which they have shown amidst all the pressure of business to consider our profession in every way, has to me been marvellous; and I feel sure that there is not a man on the Council but would gladly see good Dental schools throughout the country, and

an Examining Board in all three kingdoms. And now we must turn to another part of the subject, leaving aside the monetary aspect of the movement, inquire what dentists propose to give in return for the Diploma they are asking to have instituted? 1st. They must obviously be prepared to pass an examination. Any Board of Examiners which may be appointed will be composed of men who know all about the exigencies of practice, and as gentlemen holding such a position, will no doubt be able and willing to show due consideration to men who have long since left school, and whose power of explaining what they know has been lost in the application of their knowledge. But a modified examination they must not be asked for. Such a demand is derogatory alike to the examiners, to the candidates, and to the coveted Diploma. Whoever wishes to apply for it, may rest assured that there will be plenty of time for every man who means to go up for this Diploma to qualify himself for a fair examination. If men have time to spare to agitate for this Diploma, they have also time to prepare to receive it. With the Dental literature now at their disposal they can soon get up a large amount of theoretical knowledge; and that, added to their practical knowledge, will form a good field for any Examiners to explore. For more elaborate surgical and anatomical knowledge some organization may be required; but as medical schools are more numerous than they used to be, I see no difficulty in forming classes in those towns where they have been established, and in getting proper teachers. These classes might be held at night, so that men from outlying districts might attend them without interfering with their work during the day. This I think, is one of the many ways the matter of instruction might be managed. They must also be prepared to give their adherence to that great unwritten code of professional conduct in which Dentists, I regret to say, have made but small progress. The reason of this backwardness is not far to seek. It is one thing to belong to a profession, and another thing to be a professional man. Professional behaviour must be part and parcel of a man's existence. It must become an instinct with him: in fact, it must be born with him, and cultivated by education. A professional man should be reared in a professional atmosphere, and as has been said in reference to something very different, "Take it in at the pores." If this be true, what wonder that we are as a professional body behind in professional feeling and professional modes of thought? But let us take courage, the time is not so long gone by when kindred branches of the healing art were quite as far behind in those respects, and that too under greater advantages than we possess. When the next generation of Dentists comes to the front, it will be an improvement on the present one, and transmit its higher tone, to be increased and intensified by that which is to follow it. We must look this steadily in the face; we must try to find means for professional conduct rather than excuses for non-professional conduct; we must cease to coquette with trade, either by stealthy advertisements or by bold avowals of having advertised in a so-called legitimate manner. A man may boast that he has made use of his professional brethren for his own petty objects, and assert that all authors do the same. The utterance of such bald and ill-directed truisms is only laying a thin varnish over a disagreeable sore, which eats like a canker worm into our vitals, and blights our fairest professional aspirations. I know that people can imagine a pressing need for advertising. Some say they must live. I hope I may be

pardoned when I say, I fail to see the necessity. But supposing it to be true, must they live by Dentistry? Have they been driven into the profession against their will, and are they taking their revenge by dragging it from its true position? Others say that the necessities of a country practice demand advertising. I can only say in reply, that a man may make known his whereabouts to his patients without naming his occupation, even if he has to resort to periodical announcements. His name is his own; but when he advertises his profession he takes an unwarrantable liberty with that which is the property of many others who set a much higher value upon it. And, let me say further, that it is the value which high-minded men have given the designation Dentist, which makes those who degrade it by advertising so ready to use it. Now, gentlemen, if we want to be professional men, we must do as professional men do; and all who wish to honour the Diploma which they seek, and hope to obtain, from the Royal College of Surgeons of Ireland, must purge themselves of their advertising proclivities and live cleanly hereafter. I might go further with this question, and show that there should be no necessity for a professional man to advertise, and that the man who has to do so "in order to live," is out of his place in assuming the position of a professional man, just as much as the man who commences business without capital is assuming a false and dangerous position, which generally ends in disaster. But, I trust, I have said enough on this very disagreeable subject. With regard to the Irish Diploma, it may not be issued this year, nor even next; for it is a difficult and delicate proceeding to disturb all the old arrangements of a corporate body. But if our Irish brethren persevere, and urge their request with a consciousness that they are ready and willing to make a fair return, they may rely on ultimate success. The work in Ireland must be done by Irishmen; and the work in Scotland must be done by Scotchmen. But wherever this work is undertaken in real earnest, and with a single-minded desire for the elevation of our profession, and the protection of the public—whether it be in Dublin, or Glasgow, or Edinburgh—then must the voices of the Dentists of England be raised, and their purse-strings opened to support and sustain their brethren. With a Dental Board in England, Ireland, and Scotland, and Dental schools throughout the country, the dream of Dental education and Dental registration will then be more than realized. Perhaps the long-looked-for time is nearer than many of us imagine.

The CHAIRMAN was then asked to vacate the chair, and, on the motion of Mr. HARRISON, Mr. BRUNTON was appointed chairman.

Mr. HARRISON then said: It is my pleasing duty, after the able manner in which our chairman has conducted this meeting, to propose a vote of thanks to him. I think that it is due to him for the very impartial manner in which he has conducted the meeting, and also for his very able statements and motives set forth in his speech, which should induce this meeting, and the Dental profession generally, to move. That is the object in view, and the one object the Irish Diploma. Mix up with it nothing else, and then we shall have one object only to talk about, and shall bring all the influence we can to bear upon such a question, so that there shall be the fullest effect given to the petition when it may be presented.

The SECRETARY seconded the resolution. He said: I am sure Mr. Turner deserves our hearty thanks for having come from London to pre-

side over this meeting. I may say that I was a little diffident in asking Mr. Turner to come to take the chair at this meeting; but the first letter in answer to mine was so cordial and so spontaneous that it gave me very great relief. I am sure we have every reason to thank him most heartily and cordially for the great interest which he takes in all matters connected with Dentistry and Dental politics.

Dr. WAITE said: I think it is one of the surest omens of our success that the meetings we have held hitherto upon this question have been presided over by honoured representatives of our profession from the metropolis; and I hope we shall continue to deserve the sympathy and very hearty support which they have accorded to the movement from its commencement. I have great pleasure in supporting the resolution.

The CHAIRMAN then put the resolution to the meeting and it was adopted

Mr. TURNER, in returning thanks, said: When I was asked to take the chair I hesitated, not because I had not the deepest interest in the object in view, but because I thought there were difficulties in the way which could not be overcome. By a lucky chance, I saw my way clear and at once resolved to attend, not with a desire to occupy the chair, but simply to be present at the meeting. With the exception of the fact that sometimes men in the centre of the country—I mean in the centre of our great empire, London—have opportunities of feeling the pulse of the authorities, and as information tends to focus itself in large centres, they may better know what is going on all over the country. With that exception, I do not see that you ought to have a London man in your chair at these provincial meetings. As far as I am concerned myself, I would much rather have been here, and have taken my part in the meeting, without occupying the chair. I would rather see some local man in the position. I think it gives a meeting more of the local stamp which it is intended to have. Men come from outlying districts round about to attend meetings like this, and if you put a man in the chair who knows these men, I think he is more likely to conduct the meeting satisfactorily. However, you have been kind enough to listen to what I have said; and it has been said in all sincerity. I can only thank you, and say that such encouragement as you give almost supplies a man with motive power to go on with the work in which he is engaged. The work which you may have to do in the country in any movement of this kind—any Dental reform movement, or even in being members of a society in London—is comparatively small compared with the work which people in London have to do. And when I said in my short address that men who have time to agitate for a Diploma, have time to prepare for it, or the examination previous to receiving it, I meant to say that the fact of men suddenly finding time to work at this movement, shows they have leisure of which perhaps they were hardly conscious. This time could be used in preparing for an examination. All people come to London for information; and the present impression, I am happy to state, is of the most encouraging character in reference to the ultimate establishment of our profession on a solid, widespread basis of security, which will endure, and which will enable the profession to grow in respectability until, as has been said by Mr. Wormald, it will be second to none.

This concluded the proceedings, and the meeting separated.

To Users of Amalgams.

By THOMAS FLETCHER, F.C.S.

THE best form of instrument for condensing the first part of a plug so as to obtain proper contact with the walls of the cavity, is a small ball-headed burnisher, and all plugs should be commenced and built up with this instrument alone as far as possible. The correct form will be found in Ash's Catalogue for 1875, Fig. 43, page 130. *This instrument is one of the essentials in obtaining sound plugs which do not discolour the dentine.* The surface discoloration of the plug depends, to a certain extent, on the alloy used, but almost entirely on the quantity of mercury contained in the amalgam. The smaller the proportion of mercury used, the less the discoloration. If a cavity cannot be kept perfectly dry until the plug is finished, it is far better to pack the plug under water from the commencement. This at first sight appears strange, but the explanation is simple. If a plug gets wet on the surface before it is condensed, the air enclosed in the under part of the plug is compressed; when the pressure is removed the confined air lifts and disintegrates the plug. Pack either all wet or all dry, and do not leave a plug soft in the mouth in contact with water. Unless moisture is totally excluded a soft amalgam is worthless if both freedom from discoloration and permanence are required. An alloy used for amalgam, whatever its composition, is utterly unreliable unless every ingot has been carefully tested for shrinkage, expansion, packing and retaining its shape under water, and discoloration. However good an alloy may be generally, no single sample of it is trustworthy until after a series of tests which cannot be completed in less than 3 to 6 months. The difference between a tested and untested amalgam is the same as between a tested and untested steam boiler; one is trustworthy, the other possibly may be so. If a steam boiler is made to work at 30 lbs. sq. in. pressure, and is worked at 100 lbs., the failure, if it occurs, rests with the user. In the same way, if an alloy is made to work with 30 per cent. of mercury, and is used with 100 per cent., the maker cannot be blamed for unsatisfactory results.—*Missouri Dental Journal.*

An Act to Incorporate the Dental Association of the Province of Quebec.

[Assented to 28th January, 1874.]

PREAMBLE.—Whereas by petition, it hath been represented, that the profession of dentistry is extensively practised in the province of Quebec, and that it is expedient for the protection of the public that there should, by enactment, be established a certain standard of qualification required of each practitioner of the said profession, and that certain privileges and protection should be afforded to such practitioners: Therefore Her Majesty, by and with the advice and consent of the Legislature of Quebec, enacts as follows :—

1. **INCORPORATED NAME.**—The persons named in section

two of this Act shall be incorporated and known as "The Dental Association of the Province of Quebec."

II. BOARD OF TRUSTEES AND EXAMINERS.—Until such other persons be elected as hereinafter provided, A B, &c., shall be trustees and a board of examiners to examine candidates, and grant certificates of license to practise dental surgery in this province; six of whom shall form a quorum for the transaction of business.

III. COMPOSITION OF THE BOARD—QUORUM—VACANCY.—The said board, to be elected as hereinafter mentioned, shall consist of seven members, who shall hold office for two years, four of whom shall form a *quorum*; any member may resign by letter directed to the secretary, and in the event of a vacancy occurring by death or otherwise, the remaining members of the board shall elect some fit and proper person from among the licentiates to supply the vacancy.

IV. CONTINUATION IN OFFICE OF THE BOARD.—The persons named in section two of this Act shall continue in office for one year from the second Tuesday in July, one thousand eight hundred and seventy-three.

V. TIME AND PLACE OF ELECTIONS.—Every subsequent election of the board shall be held on the second Tuesday in July, in every second year, after the board named in section two of this Act have completed their term of office, as provided for in section four of this Act; nevertheless, it shall be competent by a vote of two-thirds of the whole board, to order such election to take place sooner or to be held annually; said election to be held wherever in the province of Quebec a majority of the board may decide.

VI. QUALIFICATIONS OF VOTERS—THE ELECTION PUBLISHED—BALLOT.—The persons qualified to vote at the said election shall be those licentiates who have obtained their certificates as provided for in section eleven of this Act, before said election; and the board named in section two of this Act shall issue such certificates, to such persons, upon their compliance with the requisites of the said section, and it shall be the duty of the secretary to publish in the *Quebec Official Gazette*, for two weeks immediately after the said election, the names of the persons who have been elected members of the board. The said election shall be by ballot, an actual majority of the votes of the licentiates present being necessary to an election.

VII. MEETINGS.—The board named in section two of

this Act, and all boards to be hereafter elected, shall meet once a year, on the second Tuesday in July ; the said meetings may be held wherever in the province of Quebec a majority of the board may decide, and may be continued by adjournment from day to day, until the business before the said board be finished, but no session shall exceed one week. The president may call special meetings of the board at any time.

VIII. OFFICERS.—The board of trustees and examiners shall, at their first meeting, elect from among themselves a president, secretary, treasurer, and registrar, and such other officers as may be necessary ; and the said board shall, in the event of the absence of the president, elect from among their number a person to preside, who shall have the same powers and exercise the same functions, for the time being, as the president.

IX. FEES FOR ATTENDANCE.—There shall be allowed and paid to each member of the said board, such fees for attendance, (in no case to exceed five dollars per day) as shall, from time to time, be allowed by the said board.

X. PAYMENTS.—All moneys forming part of the funds of the said board shall be paid to the treasurer, and shall be applied to carry out the object of this Act. Diploma fee, 50dols.

XI. LICENSES.—All persons who have been constantly engaged, in the practice of the dental profession, in the province of Quebec, for a period of three years and upwards next preceding the passing of this Act, in an established office of dentistry, shall be entitled to a certificate of licentiate of dental surgery upon furnishing to the said board, satisfactory proof of their having been so engaged, and upon payment of the fees ; and all persons who have not been constantly engaged for a period of three years, as hereinbefore provided, shall, upon passing the required examination, and upon payment of the fees as aforesaid, be entitled to a certificate of licentiate of dental surgery in this province.

XII. BY-LAWS.—The said board shall, at its first meeting, and from time to time thereafter, make such rules, regulations, and by-laws, as may be necessary for the proper and better guidance, government and regulation of the said board, and admission to, and practice of the said profession of dentistry, and as to the mode of conducting the election

of its members, from time to time, and not inconsistent with this Act; such rules, regulations, and by-laws, may be amended, altered, or repealed, by a majority of the whole board.

XIII. CERTIFICATE AND FEES BEFORE EXAMINATION.—Every person desirous of being examined by the said board, shall, at least one month before the sittings of the said board pay into the hands of the treasurer the required fees, and enclose and deliver to the secretary, the treasurer's receipt for the same, together with satisfactory evidence of studentship, integrity and good morals, in such manner as may be prescribed by the rules, regulations, and by-laws of the said board.

XIV. LICENSE.—RIGHTS AND PRIVILEGES.—FORFEITURES.—If the board be satisfied by the examination that the person is duly qualified to practice the said profession of dentistry, and be further satisfied that he is a person of good moral character and integrity, they shall grant him a license, which shall entitle him to all the rights and privileges of this act, until such time as the board shall be satisfied that he has been guilty of acts detrimental to the interests of the profession, when he shall forfeit his certificate and title, and it shall be cancelled; such forfeiture may, however, be removed, and the said license and all rights and privileges thereunder, fully revived by the said board, in such manner and upon such conditions and terms as may seem expedient to the said board.

XV. SEAL.—LICENSE EVIDENCE.—The corporation shall have a seal, with which every certificate of license shall be sealed, and signed by the president and secretary of said board; the production of the said certificate of license shall be *prima facie* evidence in all courts of law, and upon all proceedings of whatever kind, of its execution and contents.

XVI. LIST OF LICENSES FILED WITH PROVINCIAL SECRETARY.—The secretary of the said board shall once in each and every year enclose to the Provincial Secretary a certified list of the names of all persons to whom licenses have been granted during the then next preceding year.

XVII. PENALTY FOR UNAUTHORIZED PRACTICE OF THE PROFESSION.—If any person, after the period of six months from the passing of this Act, not holding a valid certificate of license, practices in this province the said profession of dentistry for hire, gain or hope of reward, or wilfully and

falsely pretends to hold a certificate of license under this Act, or takes or uses any name, title, addition or description implying that he is duly authorized to practice the said profession of dentistry, or shall falsely use any title representing that he is a graduate of any dental college, either in Great Britain or other countries, he shall, for each such offence, be liable to be summarily tried and convicted before two or more justices of the peace, and on conviction, shall be liable to a penalty not exceeding one hundred dollars with costs, and in default of payment the amount shall be recovered by execution, and if the effects seized are insufficient to pay the said penalty, the defendant shall be liable to imprisonment in the common jail of the district in which he was convicted, for a period not exceeding sixty days, unless the said penalty with costs of conviction and subsequent costs be previously paid; no such person shall recover in any court of law for any work done or materials provided by him in the exercise of the practice of a dentist.

XVIII. PRIVILEGES OF PHYSICIANS AND SURGEONS NOT INTERFERED WITH.—Nothing in this Act shall interfere with the privileges conferred upon physicians and surgeons by the various acts relating to the practice of medicine and surgery in this province.

XIX. PRIVILEGES OF LICENTIATES DEFINED.—The same privileges and exceptions by this Act conferred upon the licentiates of dental surgery in this province, are the same as those conferred upon physicians and surgeons by the laws of this province.

XX. The 32nd Vict., chap. 69, and 33rd Vict., chap. 35, amending the same, are hereby repealed.—*Missouri Dental Journal*.

Royal College of Surgeons of England.

IN the Annual Report to the Council by the President of the College of Surgeons appear the following recommendations relative to the late memorial from the Association of Surgeons practising Dentistry, and the counter memorial from the Licentiates in Dental Surgery of the College of Surgeons, and which memorials we published in the April number of *The Monthly Review* :—

“A Committee appointed by the Council to consider certain questions relating to the Diploma in Dental Surgery,

brought under the notice of the Council by a memorial from the Association of Surgeons practising Dental Surgery, and by a counter memorial from a great number of the Licentiates in Dental Surgery of the College, have arrived unanimously at the conclusion, and have recommended accordingly, that the Dental Licence should in itself be deemed a sufficient qualification to enable the holder to undertake the appointment of Lecturer on Dental Anatomy, Dental Physiology, or Dental Surgery, or of the post of Surgeon to a special dental hospital, or the dental department of a recognized hospital. And, looking to the special arrangements necessary for such appointments, the Committee were of opinion that it is expedient that certificates should not in future be received from Teachers unless, in addition to any other qualification they may possess, they also hold the Licence in Dental Surgery of the College.

"The Committee further unanimously recommend, with a view to giving greater importance to the Dental Licence, and thereby meet the objections of the Association, that the Dental Board should gradually increase the severity of the test by which the said Licence is obtained."

The following gentlemen having undergone the necessary examinations were admitted Licentiates in Dental Surgery at the meeting of the Board on the 26th inst., viz. :—

Fisher, W. M., Dundee.	Pedley, T. F., High-st., Boro'.
Gill, C. L., Bow-road.	Read, Lawrence, Gower-street.
Girand, L. G., Paris.	Rowney, T. W. F., Hull.
Margetson, W. E., Dewsbury.	Tuxford, J. E., Boston.
Matheson, Leonard, Wharton-st.	Welch, J. E., Brighton.
Morison, J. C., Powis-sq., W.	Williams, E. L., Rhyl.
Murphy, O. B., Derby.	

Four Candidates were referred.

Examination Papers for Diploma in Dental Surgery.

February 6, 1877.

N.B.—The Candidate is required to answer at least one of the two questions, both on Anatomy and Physiology, and on Pathology and Surgery.

ANATOMY AND PHYSIOLOGY.

1. Describe the position and relations of the Submax-

illary Gland; and the characters and functions of its secretions.

2. Describe the Antrum, and the characters of its lining membrane; and state how it is supplied with vessels and nerves.

PATHOLOGY AND SURGERY.

1. How is dislocation of the Lower Jaw usually produced? Describe the appearance of a patient suffering from this accident, and how you would reduce the dislocation.

2. Describe the diagnostic characters of Epithelioma of the Lower Lip, and its treatment.

N.B.—The Candidate is required to answer at least two out of the three questions, both on Dental Anatomy and Physiology, and on Dental Surgery.

DENTAL ANATOMY AND PHYSIOLOGY.

1. Describe the various kinds of vaso-dentine; and mention the chief difference between human dentine, osteo-dentine, and vaso-dentine.

2. Describe the methods by which the union of contiguous teeth may be effected.

3. Describe the form in the lower jaw of a child at birth, at the age of eight years, and adult at twenty-five, and an edentulous old person at seventy years of age; enumerating, as regards the two first, the number and condition of the teeth, mature and immature.

DENTAL PATHOLOGY AND SURGERY.

1. Enumerate and describe the congenital defects in dentine and enamel.

2. State the composition and uses for dental purposes of the following substances:—Amalgam stoppings, osteoplastic and gutta-percha stoppings, vulcanite, pink, red, and black, and arsenical paste.

3. Enumerate the several methods that are adopted in excluding Saliva from teeth during the process of stopping; and state the reasons why such precautions are necessary.

June 22, 1877.

ANATOMY AND PHYSIOLOGY.

1. Describe the outer wall of the cavity of the nose, and name the sinuses in immediate relation with it.

2. Describe the distribution of the third division of the fifth pair of nerves, and state what are the functions of its branches.

PATHOLOGY AND SURGERY.

3. What are the most common causes of necrosis of the lower jaw? Describe the process of exfoliation of a sequestrum.

4. Describe the appearances of those diseases of the tongue which more or less resemble epithelioma; and state the causes which give rise to them.

DENTAL ANATOMY AND PHYSIOLOGY.

1. Describe specimens 1, 2, and 3 under the microscope.

2. Sketch the history of the development of, and changes in, the osseous and dental portions of the inferior maxilla, from the period of birth to the age of seven years.

3. Give the chemical composition of enamel, cementum, and dentine. Describe the chemical changes which occur in the latter during the progress of caries, and state how they are probably effected.

DENTAL SURGERY AND PATHOLOGY.

1. Enumerate all the circumstances under which the extraction of sound temporary and permanent teeth may be necessary.

2. What are the conditions of the pulp which would induce you to endeavour to preserve or destroy it? Describe the treatment in both cases.

3. Describe the form and structure of (a) syphilitic teeth, and (b) teeth with rocky or honeycombed enamel, pointing out the distinctions between the two.

Rupture of the Healthy Œsophagus.

DR. FITZ, Assistant Professor of Pathological Anatomy in Harvard University, contributes a paper on this subject to the *American Journal of Medical Sciences*, January 1877. He commences with a case which, as he says, is of exceptional interest and importance, owing to its clinical obscurity, the long duration of life in the presence of so serious an injury, its tolerably uncomplicated character, the thoroughness of its description, and the unquestioned nature of the lesion. The following are the important features of the case. The general condition of the patient, aged 31, was that of debility, due to long continued abuse of alcohol. For a year previous he had suffered from delirium tremens and obstinate gastritis. He had not complained of pain or difficulty in swallowing. On January 26, while at supper, he suddenly became partially strangled by a piece of food lodging somewhere in his throat. At this time there was no difficulty of respiration. After an hour of intense anxiety, he ejected, by a concentration of his entire muscular energy, a piece of hard, tough gristly meat; almost immediately afterwards he ejected a moderate

quantity of clotted and liquid blood. Emphysema was now noticed on both sides of the neck, on the left first. Pain in the left chest was now complained of, but there was no evidence of any sudden tearing of the tissues in that region. During the next two days there were frequent vomiting (occasionally of blood) constant thirst, and emphysema extending all over the body. On the third day the vomiting had nearly stopped. During the fourth, fifth, and sixth days, the patient passed through an ordinary attack of delirium tremens. Nourishment could be taken and retained. Tetanic spasms next set in, and the patient died of exhaustion seven-and-a-half days after the beginning of the illness. The spasms were accompanied by a sharp excruciating pain, referred to the region of the heart and stomach.

At the necropsy, the anterior mediastinum was emphysematous; the left pleural cavity was obliterated by old adhesions, which were emphysematous, and the costal pleura contained numerous bullæ distended with air. In front and to the right, at and below the bifurcation of the trachea, was found a rent in the œsophagus two inches long, passing through all its coats. Its edges were sharply defined, and gave no evidence, microscopically or otherwise, of a pre-existing ulcerative or degenerative process. From this a cavity extended into the posterior mediastinum, filled with clotted blood. The walls of the œsophagus were of normal consistence. The stomach showed appearances of chronic catarrhal gastritis; no indication of *post mortem* softening.

The author then discusses some of the above points in detail. The rupture seems to be attributed by him not to vomiting, but to violent expulsive straining, "such as might occur during defæcation or parturition." The emphysema he considers due to "a rupture of the air-passages," independently of the tear in the œsophagus, from the fact that the subpleural tissues and the pleural adhesions on the left side alone were infiltrated with air, and that there was an absence here of evidences of recent pleurisy. A double rupture must have occurred within the lung in the first place to permit the air to pass upwards and make its way beneath the costal pleura, and secondly through the pleura, that the adhesions might become emphysematous. With regard to the other symptoms, Dr. Fitz remarks that there are "scarcely any calling direct exclusive attention to the œsophagus, neither severe localised pain, nor difficulty in swallowing."

Rupture of the healthy œsophagus in a person free from disease may take place as a rare occurrence. Such ruptures are quite independent of injuries produced by foreign bodies. The rupture takes place between the bifurcation of the trachea and the diaphragm in the interior or lateral walls of the œsophagus, and corresponds in direction with the long axis of this tube. Though it is not impossible that the tearing of the tissues may extend through the pleuræ, one or both, such an event is of very unlikely occurrence. There are two factors essential; the impaction of a foreign body in the œsophagus, and the exercise of great muscular force in the attempts to remove it. There is no good reason for considering that the act of vomiting can in any way produce this result, nor is it essential that the foreign body should remain in contact with the œsophageal wall long enough to give rise to inflammation from pressure. The fact of muscular action alone being sufficient, as the active agent, is of considerable value from a medico-legal point of view, where the introduction of a bougie may be asserted as the cause

of the rupture. Those persons in whom this lesion has been met with have been drinkers, and have suffered from various disturbances of digestion. There is no reason to suppose, however, that the excessive use of alcohol as such, or the digestive disturbances, have been special predisposing causes of any marked importance. Pain is not a very prominent early symptom. It has not been found to be of a tearing character, nor is suddenness one of its features. Nausea and vomiting are not prominent features." [These remarks as to the prominence of pain and vomiting are scarcely borne out by the case quoted in Dr. Fitz's paper.—*Rep.*] "Liquids may be swallowed without pain. When the disease assumes a protracted course, it is essentially a gangrene of the mediastinum, combined with gangrenous pleurisy. At the outset there is little to call direct attention to the œsophagus, except the impaction of the food and the eventual hæmorrhage, and nothing to determine absolutely the fact of a complete rupture at the time of its occurrence. The diagnosis is likely to be attended with considerable difficulty, and death is the result."

Dr. Fitz considers the rupture of the œsophagus, in the few recorded cases which he admits to be of this nature, to be due to muscular straining; we hardly see how muscular force acting *ab extra* could influence, so as to rupture, one of the structures lying in a region anatomically situated like the posterior mediastinum. For ourselves, while we admit that the actual cause of the rupture of the œsophagus does not seem to be quite clear, we would draw attention to the facts that in two of the cases a piece of food had lodged in the œsophagus, and that for an hour at least, during which ineffectual attempts at vomiting continued violently and ineffectually, the acid contents of the stomach must have been repeatedly propelled against the obstruction and the adjoining parts of the œsophagus. In considering the cause of the rupture, Dr. Pavy's experiments (*Guy's Hosp. Repts.* vol. ii, 3rd series), in which it has been shown, by placing the ear of a rabbit and the leg of a frog in a gastric fistula, that the gastric juice will act on living tissues, should not be forgotten.—*The London Medical Record.*

New Inventions.

FLETCHER'S PATENT UNION HOT BLAST BLOWPIPE FOR CANDLE, LAMP, OR GAS.

THE improvement consists in coiling the air tube into a light spiral *over the point of the jet*, this coil takes up the heat which would otherwise be wasted, and utilizes it by heating the air in its passage. With the same amount of blowing as the common form, this blowpipe will do nearly double the work; if high temperatures are not required, the labour of blowing is reduced in proportion.

The most prominent advantages over the old blowpipe are—

Great increase in heating power with the same source of heat.

The jet of flame obtained is both longer and more clearly defined than in the common blowpipe. A finely pointed flame may be easily obtained from 5 to 8 inches long when gas is used.

No condensed moisture if used with the mouth.

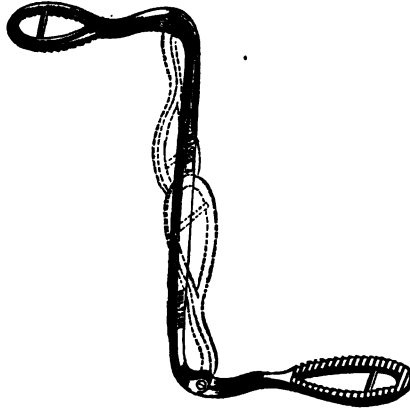
More compact, and portable, and better balanced.

Perfect steadiness in the pattern for chemical purposes without holding in the hand.

The power of doing work impossible with the old blow-pipe.

A NEW TONGUE DEPRESSOR.

THE subjoined illustration represents a new Tongue Depressor made by Mayer & Meltzer according to the design of Mr. James Keene, Aural Surgeon to Westminster Hospital. The shaft of the instrument is about six inches long,



and at each end is hinged an arm so shaped as to accommodate the teeth and gag the tongue. One very useful feature of this part is in the lingual surface being roughened with ratchet-like teeth, so that a more perfect command of the tongue can be obtained than by an ordinary smooth surface.

The instrument is well-suited for a patient holding down his own tongue; it is also neatly made, nickel plated, and when folded occupies little room.

Correspondence.

We do not hold ourselves responsible for the views expressed by our Correspondents.

The Meeting in Manchester.

THE QUALIFIED AND THE UNQUALIFIED.

To the Editor of "the Monthly Review of Dental Surgery."

SIR,—The two sections into which the Dental profession *proper* is at present divided, are an anomaly that should speedily be remedied. And I shall at once say that what I mean by "the Dental profession proper" is not only those who are Licentiates of the Royal College of Surgeons of England, but also *all* who have attained to a fair knowledge of the principles and practice of Dentistry, and carry these out in a reputable manner, but who heretofore neglected or could not take advantage of the regulations of the Curriculum in order to obtain the Diploma.

The qualified Dentists are very properly attaching importance to the qualifications they have received from the College, and naturally, and indeed fairly enough, are endeavouring to *distinguish* themselves in the eyes of the public from those who have not. Thus, a railway time table published at 80, High Street, Peckham, and printed in your issue of this month, gives a complete list of Qualified Dentists (Dental Licentiates of the Royal College of Surgeons, England), in the S. and S.E. districts of London, reference for which may be made in the Medical as well as the ordinary London Directory for 1876, and then follow the names of eleven gentlemen who hold the Qualification.

Now, Sir, as one who, from circumstances over which I had no control, belongs to that class of practitioners designated as unqualified, I must say that I received the announcement alluded to with anything but pleasurable feelings. All Dentists practising in my position can view the efforts of these qualified gentlemen in no other light than as a means to take the bread out of our mouths and at the same time lessen our social status. But when such is the state of things, it is encouraging to find that a movement is being made with the object of placing a qualification within our reach. As cheering as a sail in the distance to the shipwrecked is the report of the meeting lately held at Manchester, and published in your journal of this month.

As the success of the project I have just referred to entirely depends upon the number of Dentists who consent to present themselves for examination at the Royal College of Surgeons, Ireland, I look upon the qualification as almost in my possession, for I am confident that no one who has a particle of self-respect, and who wishes to stand well with his patients as well as the public, will hesitate to take advantage of the boon about to be placed within the reach of the "unqualified" section of the profession I pointed to at the outset. I trust that ere long the publication of the list of the *eleven* qualified Dentists already mentioned, and which some no doubt at first viewed with no kindly eye, will soon be greatly augmented by the addition of Licentiates of the Royal College of Surgeons, Ireland; and let me add, that the only effectual way in my opinion, to disperse the hoards of charlatans who now traffic on the credulity of the public, is to adopt every legitimate means to educate the latter as to who are qualified and who are not. I am, Sir,

A QUALIFIED DENTIST WITHOUT A DIPLOMA.

June 30th, 1877.

TO THE EDITOR OF "THE LANCET."

SIR,—I should feel obliged by your insertion of the enclosed copy of my resignation as a member of the Dental Reform Committee, as, my name having appeared in connexion with the meeting on April 7th, I might be supposed to homologate its proceedings.

I am, &c.,

Edinburgh, May 12th, 1877.

J. SMITH, M.D., F.R.C.S.E.

Edinburgh, 11, Weymyss Place,

May 10th, 1877.

SIR,—I feel it to be inconsistent with my opinions, and the official position held by me in the Royal College of Surgeons of Edinburgh, that my name should longer continue on the Dental Reform Committee. I beg therefore that it be at once withdrawn.

I trust that the Royal College of Surgeons of England will not be induced to attempt violating the rights and powers of the other licensing bodies throughout the kingdom, nor the General Medical Council be found prepared to stultify its own Act of 1858, in the manner those favoured by the College with its certificate of fitness to practise dentistry, desire and seem to expect.

I also regret to find a policy adopted by the Dental Reform Committee endorsing that moral "picketing" of every fully qualified medical man found in the ranks of dentistry, which has of late been so prevalent, and which ought to have been left to those aspiring, first to reach by a side-wind the designation of "surgeons," and next to usurp their position and privileges.

Meanwhile it is to be hoped that the interests of the various dis-

tinguished licensing boards throughout Great Britain will be protected by the Medical Council strengthening those clauses in their Act by which its terms as already existing may be more simply and more effectually enforced.

J. Smith Turner, Esq.

I am, Sir, your obedient servant,
J. SMITH.

DENTAL REFORM.

TO THE EDITOR OF "THE LANCET."

SIR,—I have read with some regret a communication from Mr. Tomes, which appears in your journal of this week. It is an ingenious letter, but the arguments contained in it are not always based on correct premises, and consequently many of its conclusions are very incorrect.

It is also a subject of regret to me that Mr. Tomes should insist upon laying so much stress upon a typographical error which, by a verbal misarrangement of my own, led to a mistake which has been explained, and which was corrected immediately it was recognised. Anyhow, my statement, even as it appeared, in nowise affected the sense of his amendment to a resolution of which I only wished to give the interpretation, and beyond so doing I have never spoken for him "on several occasions." Mr. Tomes has somewhat cleverly concealed the fact of his inability to deny that interpretation in a long letter in which he introduces irrelevant subjects, and draws his inferences somewhat illogically.

I am quite capable of judging between the laws of present and future restriction, but Mr. Tomes's way of putting the case neither leads me to think that an attack has not been made on existing practitioners, nor does it convince me that he is right in his view that legislative enactment should in future interfere with the rights of surgeons practising as dentists, or that educated and thoroughly trained practitioners should be excluded from special registration (should this ever be effected) and title, and debarred from being able to recover fees at law for dental operations. It would surely be an anomaly for a surgeon in practice in the dental branch of surgery to be forbidden under penalty from calling himself a *surgeon-dentist*, whilst others who are not surgeons would be legally permitted to style themselves *surgeon-dentists*. This uncalled for and, to my mind, injudicious, proposition is the ground of my objection to Mr. Tomes's amendment, and this, the main question, has nothing to do with the licentiateship in dental surgery, which he persistently introduces, as though he would wish it to be thought that that was the point of attack, the other but a feint.

The Association of Surgeons practising Dental Surgery does not ignore the licentiateship, although it does not admit those who hold the licence only into its ranks. It is not "a hostile society," as Mr. Tomes improperly calls it, for its members are keenly anxious for the preservation of the position and well-being of their profession, and jealous lest any retrograde movement should interfere with its status and advancement. Neither does it deny the necessity for special training, and has never asserted, directly or indirectly, that the dental curriculum and licentiateship are "but troublesome and superfluous." As far as I am concerned—I leave it to Mr. Coleman to speak for himself—I maintain that there are no grounds for saying that I have changed my opinions, "suddenly and unexpectedly," for I have only consistently upheld the theory that general and special surgery cannot be too closely united.

If it can be proved that I have, by word of mouth or in writing, expressed myself as antagonistic to professional education and advancement, or have sought in any way to "degrade" the special curriculum and licence sanctioned and granted by the College of Surgeons, I shall willingly acknowledge the fairness of Mr. Tomes's strictures; but if he cannot bring forward such proof, I can only feel that he has made an ungenerous attack upon me. Moreover, he must know the motives which prompted me, at much inconvenience, to accept the appointment of Lecturer and Dental Surgeon to the London School of Dental Surgery and the Dental Hospital of London. It was not the "fees" which tempted me, and I think that he might have given me credit for acting from a conviction that I was fulfilling a duty by assisting in carrying out a good work, and one which would prove of much service to young aspirants to practice, and more especially so inasmuch as I carried on the duties for a much longer period than I originally intended; not for the sake of "the fees," but because I felt my services were appreciated, and my teaching and experience of some value.

In professing to represent the object of the Association in submitting certain resolutions to the Council of the College of Surgeons, Mr. Tomes does not allude to the third one of the number, which was as follows:—

Resolution 3—"That it is undesirable to relax the strictness of the present curriculum for L.D.S. diploma in favour of those who have had repeated opportunities of obtaining it, not only *without examination* in the first place, but subsequently might have received it with a modified examination, free from the prescribed course of study. Moreover, it is suggested that any further relaxation would be a manifest injustice to those who have obtained the Dental Licentiate'ship by going through the full curriculum required."

This resolution alone proves that that Society is no opponent of the Licence, whilst the accusation of intentional deception against honourable gentlemen, despite their repeated denial, is a charge so serious that, without the strongest grounds and the most complete knowledge of the facts, it should never have been introduced.

Finally, I repeat that I am, and I believe every member of the Association is, a strong supporter of special as well as general medical training and education for those practising or intending to practise dental surgery. I imagine that very few who have been wise enough to qualify themselves by becoming fellows or members of the College of Surgeons, or who have University medical degrees, will really feel flattered by the notion that the L.D.S. may be "degraded by an Association" with those degrees; nor can they be consistently charged as being "irrelevant." I am quite sure that the more extended possession of medical titles is the cause, to a great extent, of the fact that dental surgery, as it is now known, has become so important a branch of the healing art; and I do not think that I can be accused of misstatement when I say that among the younger men who have made their mark, those possessing medical titles are the most conspicuous both in writing and debate. If the extended education required for those titles does nothing else, it cannot be doubted that broader and more general views are developed by the opportunities afforded for more extensive fields for observation. It must be clear to your readers that my interpretation of the resolution passed at the Dental Reform Committee was correct, and that it has not been denied; whilst it is equally plain that that resolution *alone* has been the

cause of the present discussion, and not the action taken by a body of gentlemen who formed themselves into an Association with the sole object of maintaining and elevating the status of their specialty.

I am, Sir, your obedient servant,

May 13th, 1877.

SAMUEL CARTWRIGHT.

THE DENTAL REFORM ASSOCIATION.

TO THE EDITOR OF "THE LANCET."

SIR,—I am sure your readers in general must be heartily tired of the lengthy controversy carried on in your pages in regard to dental politics, and I should consider further intrusion unwarrantable were it not that Mr. Tomes brings against me serious but happily most unwarrantable charges. In the first place, I am accused of a change of opinion, in itself a small matter, were it not associated with the much graver insinuation of having received students' fees for carrying out principles I have latterly renounced, a charge which I am sure Mr. Tomes, on sober consideration, will regret having ever made.

From the earliest period I decided to adopt dental surgery as a profession to the present moment, I have never altered my opinion in regard to the desirability of every dentist being a fully qualified medical man, and my own course in regard to that opinion will prove my consistency. When the dental diploma was first established I regarded it, as I do now, as an admirable test for proving technical knowledge of the possessor, and one most desirable to be obtained by all practising the specialty of dental surgery. These views I have, as facts can fully bear out, consistently urged on all occasions since I was elected a member of the staff of that special hospital to which Mr. Tomes refers, and of which I have now the honour to be senior medical officer; and I am happy to state that I have in many instances been the means of inducing its students to obtain that to which I myself owe more than to anything else any success I may have obtained to in my professional career—viz., the possession of the M.R.C.S. The hostile association, as Mr. Tomes is pleased to call a body of which I am at present the treasurer, entertains in general my opinions as expressed.

In regard to a second charge—viz., Mr Cartwright's, and my *opposition* to the Dental Reform Association, I can only ask your readers to inquire for themselves, if they care to do so, and they will find that its committee worked most harmoniously and unitedly until the first meeting of Mr. Tomes's attendance, and when he upset what had already been agreed to, necessitating the resignation of Mr. Cartwright and myself, also of Mr. Saunders and Mr. Gaine. The only other charge to which I will refer is my objection to the registration of the special—i.e., dental diploma. Mr. Tomes must be fully aware I have never for one moment offered any such objection; on the contrary, I most fully uphold it, and all I have ever said or done will go to prove it. In conclusion, I am truly pained to be compelled in justice to myself to have to defend charges emanating from one from whom in times past I received the greatest kindness both as a friend and an instructor, and of whose scientific achievements I should only be too proud to be the possessor.

I am, Sir, yours, &c.,

South-End, May 14th, 1877.

A. COLEMAN.

ON THE ADMINISTRATION OF ANÆSTHETICS.

TO THE EDITOR OF "GUY'S HOSPITAL GAZETTE."

SIR,—Within the last three years, fatal cases have occurred during the "process" of anæsthesia, under the exhibition, of nitrous oxide gas, chloroform and ether.

The chloroform cases are sufficiently known to the profession, and have unfortunately been too often laid before the public.

A death during the administration of pure ether, which happened at one of our London Hospitals, has been wisely kept from the public, and I am now only allowed to mention it through the kindness of the surgeon by whom resuscitation was attempted.

But now general attention is drawn by a recent sad occurrence in Manchester, and after a personal interview with the operator in that distressing case in which a much respected surgeon (a Guy's man) lost his life, I can come to no other conclusion but that the gas was the only cause of death. It is well known to those who often administer the gas that unpleasant effects may follow its inhalation, so that the administration of nitrous oxide, and of anæsthetics generally, take rank amongst the medical procedures which endanger life, and require skill for their right conduct.

The law does not allow an unqualified man to practice medicine or surgery, yet under whatever category the administrator of anæsthetics may fall, unqualified dentists are permitted to administer gas themselves and extract, thus actually practising a critical medical act before their patients. Surely here is a great anomaly.

It is not a common thing for unqualified persons to administer anæsthetics in private practice, yet it is only of late years that experienced men have been called into requisition, and though often perhaps the surgeon's own experience would justify his using the anæsthetic, it should be remembered the surgeon is fully occupied with the work immediately under his fingers, which work is often far from the seat of administration of the anæsthetic, so that the life of the patient is directly in the hands of the administrator of the anæsthetic.

A sincere friend of mine of large operating practice, where the administration of the anæsthetic is immediately under his own eyes (and nose) when operating, assured me that he would much prefer the responsibility for the safe administration of the anæsthetic to be taken off his shoulders.

Surely there are ethics in the practice of anæsthetics, and it is with the object of establishing these that the foregoing observations are submitted for ventilation to such a worthy school.

38, Brook Street.

Yours very respectfully,
TOM BIRD.

Obituary.

W. BATHURST WOODMAN, M.D., F.R.C.P.

WE record with the deepest regret the death of Dr. Bathurst Woodman, under most painful circumstances. Dr. Woodman had been in a very bad state of physical health and in a very depressed condition of mind since November last, and his friends had been very anxious about him. Latterly his depression had increased, but no one suspected that it had reached such an extreme degree as the result has proved. Dr. Woodman had recently been staying at a coffee-house in Praed street, Paddington.

He returned there at seven o'clock on Saturday evening the 7th inst., and retired to his room at half-past nine, requesting the landlord not to call him in the morning. The landlord knocked at his door at noon the next day, but hearing no sound, his suspicions were aroused, and he had the door burst open. Dr. Woodman was then found on the bed, lying on his back, and quite dead. A post-mortem examination was made, and Dr. Meymott Tidy gave evidence at the inquest to the effect that prussic acid was found in the stomach in sufficient quantity to cause death.

At the time of his death Dr. Woodman was in his forty-first year. He was well known as a careful and accomplished physician, a ripe scholar, and a true and cordial friend. The greater part of his professional life was spent in severe and unremitting labour, and he was the author of many valuable contributions to medical literature. He also read a paper before the Odontological Society on cases of supposed mercurial poisoning from wearing coloured vulcanite plates.

LONDON DENTAL HOSPITAL.

CASES TREATED FROM JUNE 1ST TO JUNE 30TH, 1877.

Extractions.	Children under 14	...	...	...	498
	Adults	...	...	...	739
Under Nitrous Oxide	...	...	...	...	250
Gold Stoppings	...	...	...	...	243
White Foil ditto	...	...	...	...	44
Plastic ditto	...	...	...	...	455
Irregularities of the Teeth treated mechanically	...	...	...	...	48
Miscellaneous Cases	...	...	...	...	49
Advice Cases	...	...	...	...	222

Total 2548

JOHN ACKERY, *Dental House Surgeon,*
Pro tem.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of Messrs. SMITH, ELDER, & Co., 15, Waterloo Place, Pall Mall. All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4, Crane Court, Fleet Street, E.C.

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THE MONTHLY REVIEW

OF

DENTAL SURGERY.

No. III.

AUGUST, 1877.

VOL. VI.

The Dental Student and His Studies.

HITHERTO we have issued our "Students' Number" in September, and, consequently, only a fortnight intervened between the date of our publication and the commencement of the winter session. In order to give more time to those who have to consider the important questions—which of the many hospitals shall I join, &c.? we have thought it well to make this August issue our "Students' Number."

It is not only usual, but also opportune to make some suggestions to students on such occasions. In our article of last year to "The Dental Student" we alluded to the great disloyalty of certain promoters of the L.D.S., and in consequence of the tumult which was then rising we had to "leave the student *in statu quo*." But time—nature's great leveller—has brought better prospects, and the threatened discount has recoiled.

Let the Dental Student enter upon his professional education with a definite goal before him—the acquirement of the L.D.S. of the Royal College of Surgeons. To this essential qualification we earnestly recommend him to add the membership of that college, or any other surgical qualification.

Having laid out his plans, and determined upon the qualification or qualifications to which he aspires, let him work with an earnestness which becomes a true student;

with a comprehensive single-mindedness to train the mental faculties to gather and arrange knowledge systematically ; to weed out the good from the indifferent, the special from the general ; ever remembering that knowledge is power, and not to "despise any form of knowledge whatever."

In his competition in the world he will find that his intellectual powers will have to be his weapons of combat ; that in the struggle for existence, unlike the warriors of old, the Dental Student, as such simply and as such qualified, will find mind to be more potent than physical strength—that to him will appertain the law of survival of the more cerebrally developed. Yet let it not be inferred that we ignore manipulative skill. But to consider such in its order of evolution it must be subsequent to intelligence—morphological development determines function.

With these stern requirements let him enter upon his preparatory course in such manner as will best fit him for the strife ; and in that struggle, with its "principle of preservation or survival of the fittest," let him avowedly profess and practice not a ferocious egotism or enmity, but a rational, professional live and let others live.

The Coming Together of Dried Bones.

THE several movements which are now occupying the attention of the profession, when viewed in their entirety, present something of a "labyrinthodont" appearance. Furthermore, the attitude occasionally assumed by leaders of the different sections is incongruous with the avowed special object of that section ; and, without being hypercritical, individual speeches are not of themselves so full of agreement as they might be.

We have not of late heard of the Association of Surgeons Practising Dental Surgery doing anything of particular moment, nor of their preparing another "thunderbolt," though their last petition has not yet received its finality.

The Dental Reform Committee, since its reorganization, has assumed an activity which is an earnest of speedy results. The amended resolutions of this Committee are not consonant with the feelings of the Association, and it is maintained that they who are not with are against—relatively or positively.

The Irish Dental Diploma Committee are doing their best to move the souls of the 2,000. They are also opposed by the Association—the opposition being expressed in the petition of the Association, to which the names of the members were appended. Yet, withal, a member of the Association seconds the most important resolution of the Bristol meeting!

If we had a definition of "quackery," and of "educated practitioner;" and if we knew what are the "reasonable and accessible terms" expected, then we should be in a position to criticise the movement as a whole, and also the individual speeches delivered from time to time: Then should we be better able to point out incompatibles which are barriers to that perfect unanimity all acknowledge to be essential to the success of the undertaking.

The zeal with which the committee labour is worthy of the highest commendation; and let it not be forgotten that earnestness is a great element of success. Then let not that zeal be mingled with any such intimidation as that which was uttered towards the close of the Bristol meeting:—"Should this fail, there are those amongst us who will not hesitate to unfurl the banner of a separate body, and go in for the establishment of a distinct College of Dentists."

Would that some one would arise amongst us with such influence as would effect the sinking of minor differences, and bring about a closer union with less jealousy than now exists between the 2000 Dental Practitioners of this country. Upon the questions of increased facilities for education, for a higher education, and for registration, all are agreed. It is upon the means by which the first and last of those desiderata are to be accomplished, that men are at variance.

The Month.

THE NATIONAL DENTAL COLLEGE.

Apropos of the article in *The Month* of our last issue regarding certain remarks of "Vagrant"—the London correspondent of *Johnston's Dental Miscellany*—we observe in the calendar of the National Dental Hospital and College, just published, that the London School of Dental Surgery was opened on April 20th, 1860, and that the Metropolitan School of Dental Science was established on October 5th, 1859. Therefore "Vagrant's" assertion that the former is "the parent school" is opposed to the facts we have here quoted.

THE IRISH DENTAL DIPLOMA COMMITTEE.

We learn that this committee will hold a meeting at Birmingham early in September, also one in Edinburgh in October. The report of the Bristol meeting will be found on another page.

THE DENTAL REFORM COMMITTEE.

At a meeting of the Dental Reform Committee, held on the 11th inst., the resolutions which have been agreed to were, with the aid of a Parliamentary Agent, embodied in a bill, which it was decided to present to Parliament.

THE ACTION AGAINST MR. A. WINTERBOTTOM, F.R.C.S.

We congratulate Mr. Winterbottom on the issue of the action lately brought against him for fracturing the jaw of a female patient during the extraction of a lower molar root. The jaw was diseased, and mal-praxis was not established.

DENTAL MATERIA MEDICA AND THERAPEUTICS.

By JAMES STOCKEN, L.D.S., R.C.S.

DENTAL SURGEON TO THE NATIONAL DENTAL HOSPITAL.

*(Prepared by desire of the Medical Committee of the National Dental Hospital).**Continued from page 65.*

POTASSÆ CHLORAS.—CHLORATE OF POTASH.

Formula.—Old: KOCIO_3 . New: KClO_3 .*Characters.*—Colourless rhomboidal crystalline plates, with a cool saline taste, sparingly soluble in cold water.*Preparation.*—Obtained by passing a stream of chlorine gas (generated by the action of hydrochloric acid on black oxide of manganese) through a solution of carbonate of potash and slacked lime; subsequently boiling, filtering, and evaporating to crystallization.*Physiological Effects and Therapeutics.*—It becomes absorbed into the blood, and is eliminated by the kidneys. It appears to act as a diuretic and refrigerant, like nitrate of potash.

The supposition that it yields oxygen to the system is probably an error, for it has been found in the urine in an unchanged condition.

In ulcerative and gangrenous stomatitis (*cancrum oris*) no internal remedy is more generally so effectual as chlorate of potash.

In ulcerative stomatitis, Dr. West states that he relies upon it almost exclusively, and that there seems to be no form nor stage of the affection in which it is not useful; marked improvement seldom fails to be observed in two or three days, and within ten days a cure is generally effected. Three grains administered in sweetened water every four hours suffices for a child aged three years; 5 grains every four hours appears to answer as well as a larger dose for a child at eight or nine years. The bowels require to be regulated and the constitution supported.

Inflammation of the Gums (gingivitis) arising from teething will, according to Dr. West, generally yield to the chlorate, 2 grains every four hours for a child of one year.Cases of *Phagedenic Ulceration, and of secondary syphilis* are recorded in which it was given, and a cure effected in a few weeks without the aid of mercury or iodine. To cachectic ulcerations, abraded surfaces, and in tonsillitis,

the chlorate finely powdered, and locally applied, or in the form of a gargle, has proved very serviceable. In ptyalism it exercises a most beneficial influence.

POTASSÆ HYPOPHOSPHIS.—HYPOPHOSPHITE OF POTASH.

Formula.—Old: $\text{KO}, \text{PO}, \text{PO}, 2\text{HO}$. New: KPH_2O_2 .

Characters.—It is uncrystallizable, very deliquescent, soluble in water and alcohol, in nearly all proportions. When heated it evolves phosphuretted hydrogen and phosphorus, and is converted into phosphate of potassium.

Preparation.—Obtained by adding carbonate of potash to solution of hypophosphite of lime as long as a precipitate of carbonate of lime is formed, then filtering and evaporating the solution to dryness, digesting the residue in alcohol (which dissolves the hypophosphite), and evaporating the filtered liquid to dryness in vacuo over sulphuric acid.

Physiological Effects and Therapeutics.—The medicinal properties are similar to those of hypophosphite of lime, which see.

POTASSÆ NITRAS.—NITRATE OF POTASH.

Synonyms.—Saltpetre—Nitre.

Formula.—Old: KO, NO_3 . New: KNO_3 .

Characters.—In white crystalline masses or fragments of striated six-sided prisms, colourless, and of a peculiar cool saline taste.

Purification.—The nitrate of potash employed in this country is obtained by the purification of the native nitre of India.

Physiological Effects and Therapeutics.—In moderate doses nitrate of potash acts as a refrigerant, diuretic and diaphoretic.

It has been recommended in threatened alveolar abscess, the pulp cavity of the carious tooth being filled with the powdered salt, and protected by cotton and wax or mastic.

In inflammatory sore throat it forms a useful ingredient in gargles.

Dose.—Five to twenty grains as a refrigerant and diuretic.

POTASSÆ PERMANGANAS.—PERMANGANATE OF POTASH.

Formula.—Old: $\text{KO}, \text{MN}_2\text{O}_7$. New: $\text{K}_2\text{Mn}_2\text{O}_8$.

Characters.—It occurs in the form of dark purple, slen-

der, prismatic crystals, inodorous, with a sweet astringent taste, soluble in water.

Preparation.—Prepared from the black oxide of manganese with caustic potash, chlorate of potash, and dilute sulphuric acid.

Physiological Effects and Therapeutics.—Locally applied, in substance or strong solution, it acts as a stimulant and mild escharotic. It readily yields its oxygen to bodies having an affinity for that element, hence its great value as a deodorizer. It has been used with success in the treatment of foetid and gangrenous ulcers, abscesses, and wounds of all kinds: as an antiseptic to the pulps of teeth which have become disorganized; and it removes the fetor of breath, arising from local causes. It forms a useful gargle in ulcerated sore throat.

Applied in powder to a carious tooth it is said to cure odontalgia.

The stains of permanganate of potash are removed by dilute muriatic acid.

POTASSII BROMIDUM.—BROMIDE OF POTASSIUM.

Synonym.—Hydrobromate of Potash.

Formula.—KBr.

Characters.—Colourless cubical crystals without odour, having a pungent saline taste, and readily soluble in water, less in spirit.

Preparation.—By adding bromine gradually, and in slight excess, to solution of potash; evaporating to dryness; reduce the residue to a fine powder, mix with wood charcoal, then fuse; lastly, dissolve the cooled salt in water, filter and crystallise.

Physiological Effects and Therapeutics.—Narcotic, anæsthetic, and sedative. In small doses or locally applied it rapidly and completely diminishes, for a time, the sensitiveness of the pharynx and velum palati, to such an extent that those parts may be tickled without exciting the least effort at deglutition, this circumstance has been taken advantage of in preparing patients for Laryngoscopic examinations and operations; and also in lessening the difficulty of taking large plaster casts of the mouth in cases of cleft palate, &c.

Some forms of neuralgia are effectually relieved by full doses of the bromide when other remedies have failed.

Dose.—Five to fifteen grains and upwards.

POTASSII IODIDUM.—IODIDE OF POTASSIUM.

Formula.—KI.

Characters.—Colourless cubical crystals which are generally opaque. They are readily soluble in water, less so in spirit.

Preparation.—Prepared in a similar manner to bromide of potassium, with solution of potash, iodine, and wood charcoal.

Physiological Effects and Therapeutics.—Its properties are closely analogous to those of iodine. Like it, it occasionally produces head-ache, flushing of the face and gastric irritation; and when taken in too large doses, produces coryza, and in some cases salivation and emaciation of the testes and mammæ, but these effects are rare.

It often proves most serviceable in scrofulous affections.

It has been found valuable in convulsions attendant on dentition, which amongst ill-fed children is often followed by hydrocephalus.

In syphilis the value of the iodide is universally recognised, but it is so in the secondary, and tertiary or constitutional forms of the disease only; in nodes, caries, and necrosis, and also in periostitis, it holds the first place in our list of remedies; and though its effects are not so immediately manifest, it exercises a no less certain influence on syphilitic affections of the skin. It may be given with great advantage in affections of the nervous system of syphilitic origin, and in syphilitic cachexia. The dose in these cases, upon the authority of Sir H. Thompson, should be from 30 to 75 grs. (?)

It proves of service in painful neuralgic affections, dependent upon an inflammatory state of the nerve coverings; it is more especially useful when the pains are increased at night and by the heat of bed.

In face-ache, partaking more of a rheumatic than a neuralgic character, Sir T. Watson found the iodide in doses of five to six grains produce a speedy and permanent cure.

Looseness of teeth, depending upon periostitis of the alveolar process, known by the great pain, swelling and sponginess of the gums, is often effectually cured by the iodide.

Dose.—Two to ten grains or more.

A remarkable Deformity of the Teeth among the Inhabitants of the Admiralty Isles.*

[We are indebted to the Editor of *Nature* for his kindness in granting the use of the accompanying engravings.—Ed. M.R.D.S.]

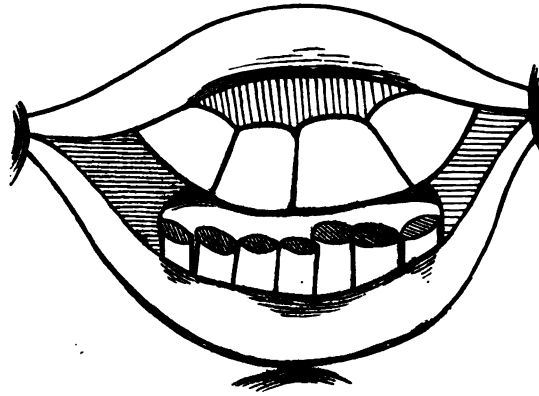
The Russian traveller, M. Miklucho-Maclay, in the course of recent travel in Melanesia, has noticed among the natives of the Admiralty and



Hermit Isles a remarkable peculiarity in the teeth, the upper incisors projecting "shovel-like," almost horizontally, and to such a degree as to

* See a note contributed to the *Illustrirte Zeitung* of Leipzig by M. Miklucho-Maclay.

extend even beyond the lips when the mouth is closed. The breadth, moreover, of one of these teeth is at times so great as to equal its visible length; being in the specimen figured as much as 19 millimetres to 16 mm. of length, measured, of course, from the edge of the jaws, not from the extremity of its fang. As all the teeth have a blackish polish,



due to the prevailing habit of betel-chewing, the mouth presents a somewhat ghastly appearance. M. Miklucho-Maclay has nowhere else met with a similar deformity of the teeth, but heard of such, when on the peninsula of Malacca, the race in which it occurs being called "orang-gargassi."

J. C. G.—*Nature*.

The Homology of the Dental Tissues, their Susceptibility to Suppressive Economy, and their present Degeneracy in Man.

By A. H. THOMPSON, D.D.S., Topeka, Kansas.

(Continued from page 68.)

The food itself is unfitted for the extensive and usurping employment they would obtain for it, and cannot, for several chemical and physiological reasons, furnish the inconceivably great amount of special nutriment that the teeth require for their resurrection and immortality. On this subject we would notice some observations of Professor Edward Smith ("Foods") bearing upon this point. "When the bran of wheat is eaten by an animal, whether man or horse, it will be found in the excrement having this layer still perfect, but the more nutritious part,

which is covered by the silica, will have been digested in proportion as it was reduced to a fine powder, and allowed to remain sufficiently long in the stomach and bowels. . . . It is of common observation that in proportion as the piece of rind is large and indigestible, so is it a stimulant or irritant of the bowel. So far, therefore, however rich the rind may be in nutritive elements, it is more likely to prevent than to sustain nutrition, since it will lead to the quicker removal from the body not only of itself, but of other and perhaps more nutritious matter. When, however, it is ground into fine powder it does not produce this effect, and although the silicious part may still be undigested, the lignine and starch which it covers may be partially digested and promote nutrition." The grain is composed of different layers, which "increase in nutritive value as we proceed from without inwards. The outside layer, or coarse bran, is the least nutritious, and as the exterior is covered with a layer of silica, it is so far indigestible, and remains as a foreign body in the bowel, setting up irritation, &c. . . . Its nutritive value in this form is limited to the starch and gluten which lie on its inner side. . . . That it can add directly to nutrition is impossible; and whilst it may be very useful to those who are well fed and need a laxative, it may be worse than useless to the ill fed who need nourishment. . . . Good seconds flour is the cheapest and most nutritious, if not the most digestible of the series, and when thirds are produced, or even when the bran is ground to a fine powder and added to the flour, the actual amount of nutritive matter is probably less than with seconds," &c.

We thus see the doubt that is thrown upon this method of dieting for the benefit of the teeth, and yet this is the most promising course of remedy that could be attempted for either prophylactic or reconstructive purposes. The broad truth is that the wave of destruction has gone too far, and that the work of hundreds of generations who have transmitted teeth that became gradually worse and worse cannot be undone by a millennium of dieting. The fault lies deeper than merely being the effect of unfavourable diet, and is the result of those silent but tremendous forces in nature that make, modify, and destroy species. Some of the multitude of natural laws influencing all animal life in all times and grades of its existence are at work upon the teeth of man, influencing them in a forcible manner for the worse.

Comparative anatomy teaches us that the teeth of man have passed the age and era of their perfection as useful organs, and that they are

now, in fact and reality, more or less rudimentary. In their present condition in the species, when many individuals possess dentures of comparative perfection, this fact is not readily apparent, but a close comparison of a number of dentures with that of any other animal whose denture is complete will demonstrate the fact.

The disuse of mastication has been the principal force in reducing the teeth of man and causing them to become rudimentary. Mr. Darwin ("Descent of Man") explains the operation of the law as follows: "Disuse at that period of life when an organ is chiefly used, and this is generally during maturity, together with inheritance at a corresponding period of life, seem to have been the chief agents in causing organs to become rudimentary. The term 'disuse' does not relate merely to the lessened action of muscles, but includes a diminished flow of blood to a part or organ from being subjected to fewer alternations of pressure from becoming in any way less habitually active." Every condition of this law is fulfilled in the case of the teeth in man with a precision that is almost an emphasis, and in the passage quoted we find the secret of the rudimentary condition of the teeth in form and structure, and the cause of their deterioration, which promises ultimately to induce their abortion. The effect of disuse, as determining and inducing the suppression of the teeth, is paramount to every other force. When a part of organs begins to pass into use, as took place in the case of the teeth in man in the troglodytic age, its reduction becomes assured. The diminishing importance of the function of mastication, by reason of the artificial reduction of food then commenced, has continued to increase in direct ratio to the developing of the methods of preparing food. The teeth were less and less actively employed, they began to be superfluous and injurious in a slight and gradually increasing degree, the cost of their maintenance was too great a demand on the system, and not being upheld by direct and active employment, they started on the way to final suppression, which we witness in progress to-day.

The principal force in determining this suppression is *economy of growth* and maintenance. The stimulus of continuous use being slowly withdrawn, the nutrition of the part would gradually diminish, and imperfect development would first supervene as the vanguard of systematic suppression. The part would cease to be normal in structure and form, and this abnormality would increase with continual disuse. Economy of growth would act with increasing force in depriving the

part of constructive and sustaining nutriment, and in time the part would be correspondingly defective in structure and form. The force acts in a variety of ways with different tissues, of course, but in the case of the teeth we may now observe what appears to be the attainment of an unusual condition of extreme deterioration. These organs seem to present a remarkable manifestation of this condition of tissues, in being in man at the present time extremely defective in form and structure, so much so as already to appear as rudiments. To this cause must be assigned the result of their especial susceptibility to disease. That this is the effect of defective nutrition and the deprivation of formative material there is no doubt; but that it is not the result of any recent want of such material, and that the fault cannot be corrected by special dieting for a few generations, we feel equally certain. The fault lies in the civilization of the race, and dates from the time the first fire was kindled to cook food, and is as inseparable from civilization as any of its benefits or evils. We must accept the fact of the defectiveness of the teeth, treating and preventing disease by all the means possible, but not indulge in any vain hopes of turning the destroying tide, for the result is inevitable.

But even in view of the preceding facts it is difficult to perceive how the present precipitous destruction of the teeth by caries can have arisen. Their recent especial susceptibility to the dissolving powers of the oral fluids cannot have been the work of a few generations of mal-nutrition, as the superficial appearances suggest, and as many theorists uphold. It seems far more probable that it is the effect of a comparatively sudden deterioration of the oral fluids, which have taken an abnormal action that was easily transmitted and increased. The structure of the teeth has, of course, deteriorated, but it has not been due to the direct and instantaneous effects of mal-nutrition. The cause of the precipitous destruction of these organs during recent generations still remains a mystery, but we think the solution will be found in the principle suggested, and the cause in the forces we have mentioned.

Secondary forces are at work assisting in the massacre of the teeth which must also be recognised, and some of which we will briefly notice. What may be called *erratic nutrition* is one of these,—i.e., the irregular nutrition consequent upon under-feeding, high-feeding, and erratic diet. High cooking of all sorts may be included under this head, where highly flavoured and prepared dishes to pamper the palate are employed, and which supply both excess and deficiency of nutri-

ment to the system in irregular variability. This kind of food induces indigestion, mal-assimilation, mal-nutrition of the tissues, retardation of growth, and abnormality of gastric and oral fluids, with their attendant train of evils.

Correlated variation is a force that has operated upon the teeth and contributed to their reduction,—i.e., the variation of correlated parts as influencing the teeth. In civilized man the extra-vascular parts are subjected to extensive suppression and variability; and abnormality in their condition is manifested also in the teeth. What effect the hairless condition of man may have upon the teeth we cannot trace out, but it has doubtless amounted to an appreciable influence. The correlation between the teeth and the hair and nails of man is most probably more far-reaching and influential than our knowledge or theories suggest at present. We notice that in all animals not possessed of hair, as the classes of fish and reptiles, the enamel is either partially or totally absent; the same may be said of the hairless mammals, as whales, armadillos, &c., though of course it is deficient in some that are possessed of hair. What definite relationship the present defective enamel of the teeth of man may have to his present quasi-hairless condition is difficult to perceive, but there may be an increasing incapacity for the production of corneous tissues in the species, aided by artificial protection of the skin.

Miscegenation is a force that, in these days of rapid transit and of migration of peoples, exercises an influence in depressing the integrity of tooth-structure along with other parts of the system. The inter-crossing of breeds and races is rarely productive of benefit, when as widely separated as are those of the human species. Human hybrids are notably deficient in physical completeness and vital power; nutrition is impaired and physiological processes weakened, so that the entire economy is depressed and abnormal. Especially is this true of the American people, who have a continuous stream of foreign and heterogeneous blood pouring into their veins. The depression that has ensued to the physique of the people of the United States may have contributed to the existing extra-defectiveness of the teeth of Americans over those of older nations. The physical type is lowered by the effect of the mixture of races, and will remain so, so long as immigration continues, with a corresponding effect upon the teeth of greater or less manifestation.

Climatic and *physical* influences of the soil and air may exercise some effect, especially in America, where but a small part of the people can be

considered as approaching acclimatization, in having resided in one locality more than two or three generations. The American people are semi-nomadic, are almost continually on the move, and the greatest part of the territory of the United States, *i.e.*, the West, has been settled almost within a generation. Thus the effects of inharmony of climate cannot but act in a depressing manner upon the general system, impairing nutrition and development, and influencing the teeth in a greater or less degree. The same may be said of physical phenomena, meteorological conditions, etc., and of malaria, etc., from the soil. All these forces figure, with more or less importance and weight, in the drama that is being enacted in the destruction of the teeth in man, and are aided and abetted by others of which we are partially or totally ignorant.—*Dental Cosmos*.

Dental Reform Committee.

The following circulars have been issued to the profession :—

12, George Street, Hanover Square, London, W.

DEAR SIR,—As it is desirable that those who have taken part in the Dental Reform movement should know how matters stand at the present juncture, I beg to forward the enclosed resolutions.

Since the original formation of the Dental Reform Committee by Mr. Charles James Fox there have been several important withdrawals from the membership of the Executive Council. The consequent vacancies have been satisfactorily filled up, and the Council trusts that those who have seceded because of some difference in opinion may yet see their way to help the majority to the realisation of the common object of all who have at heart the welfare of their profession.

The enclosed resolutions have been brought to their present form after much earnest consideration, and, although members of the Council are anxious to frame their measures in the most conciliatory manner possible, yet they feel that nothing short of the principles embodied in those resolutions will meet the just aspirations of the profession or secure to the public a fair guarantee that the Dentist of the future may be received as a competent practitioner.

The money already paid to the Treasurer amounts to £448 5s. 6d. Those gentlemen who have not yet paid are now asked to redeem their promise without delay, as further proceedings must of necessity entail a considerable expenditure. For your information I also send a list of

the Executive Council as it now stands—the names of the recently elected Members are in italics,

And remain, yours very truly,

JAMES SMITH TURNER, Hon. Sec.

DENTAL EDUCATION AND REGISTRATION.

Amended Resolution passed at a Meeting of the Dental Reform Committee, held June 16th, 1877.

JOHN TOMES, Esq., F.R.S., in the Chair.

Under the power given by the Legislature in the Dental clause, No. XLVIII. of the Medical Act of 1858, the College of Surgeons obtained a Royal Charter defining the terms upon which the Corporation might create a department of Dental Surgery, the duties of the department being to prescribe a systematic course of education for persons who propose practising Dental Surgery, and to grant, after satisfactory examination, diplomas of fitness to practise as Dental Surgeons such persons who, after full acceptance of the curriculum, may desire to be so examined.

Also for a limited period to examine persons already in practice who may desire the Diploma, irrespective of the manner in which they may have acquired their professional education.

Special schools and hospitals were established to meet the educational requirements of the Dental Department of the Royal College of Surgeons, and from the first pupils have steadily increased in numbers, one school having at the present time nearly 100 pupils on its roll.

The success which has attended the establishment of the Dental Department of the Royal College of Surgeons and the schools necessary to it is a practical acknowledgment that a special education was required, and that the one adopted meets the requirements. A large number of persons are now practising who embraced the advantages of the special education, and it is felt by these and many others whose professional life commenced at an earlier date that a great public benefit will be secured if all who henceforth enter upon Dental practice shall first receive the special education enjoined by the Royal College of Surgeons, and if persons so qualified have the exclusive use of a title or titles or designation whereby the public may recognise or distinguish the qualified from the unqualified practitioner.

For the furtherance of this general purpose the following clauses were proposed and carried :—

1. That those persons only who possess the Licentiate'ship in Dental Surgery of the Royal College of Surgeons of England, or a like qualification from any medical or surgical corporation which is or may become empowered to grant Dental Diplomas, shall be entitled to use the designation of Dental Surgeon, Surgeon Dentist, or Dental practitioner, or Dentist.
2. That any person using either of the foregoing designations unless entitled to do shall, on conviction before a Court of Justice, be fined in a sum not exceeding for the first offence, &c.
3. That a special schedule or schedules be added to the Medical Act for the registration of qualified Dental Surgeons as such only, subject to such general conditions as apply to the registration of qualified medical practitioners in respect to fees, conduct, &c.
4. That of Dental practitioners, those who are registered shall alone be capable of recovering fees for Dental operations.
5. That all persons in practice as Dentists and all Dental Students shall be required to return both name and address with proper corroboration of accuracy within a specified time after the passing of the proposed act for the purpose of registration.

The Executive Council were requested to cause the above resolutions to be reduced to an effective form by means of professional assistance, and the Treasurer was empowered to defray the necessary expenses.

LIST OF MEMBERS OF THE EXECUTIVE COUNCIL OF THE DENTAL REFORM COMMITTEE.

MR. JOHN TOMES, F.R.S., PRESIDENT.

Members for the Provinces:—Mr. G. Buchanan, Glasgow; Mr. D. Corbett, Dublin; Mr. J. D. Dennant, Brighton; Mr. W. Fothergill, Darlington; Mr. D. D. Hepburn, Nottingham; Mr. D. Hepburn, Edinburgh; Mr. F. Huet, Manchester; Mr. J. H. Kyan, Preston; Mr. J. King, York; Dr. Merryweather, Sheffield; Mr. J. N. Manton, Wakefield; Mr. J. Brown Mason, Exeter; Mr. W. J. Newman, Liverpool; Mr. J. O'Duffy, Dublin; Mr. J. S. Parkinson, Bath; Mr. C. J. Peacock, Scarborough; Mr. C. Roberts, Ramsgate; Mr. S. Lee Rymer, Croydon; Mr. C. Sims, Birmingham; Mr. S. Wormald, Stockport.

Members for London:—Mr. G. A. Ibbetson, Mr. H. Moon, Mr. T. A. Rogers, Mr. C. S. Tomes, Mr. J. A. Woodhouse, Mr. C. Vasey. T. Underwood, Vice-President; James Parkinson, Treasurer, 36, Sackville-street, W.; J. S. Turner, Hon. Sec.

Meeting of Dentists at Bristol.

SATURDAY, JULY 14TH, 1877.

A MEETING of the Dental profession took place at the Grand Hotel, Bristol, on Saturday, July 14th. The meeting was the third of a series arranged by the Dental Diploma Committee, to be held in various parts of the country, in order that the proposed scheme, which has been approved by many leading practitioners in London and the provinces may be fully brought before the profession, and thoroughly discussed.

Amongst those present were W. R. Wood, Esq., I.D.S., Brighton; R. Rogers, Esq., Cheltenham; Sidney Wormald, Esq., Stockport; Dr. Waite, Liverpool; Charles Gaine, Esq., M.R.C.S., Bath; John O'Duffy, Esq., Dublin; T. C. Parsons, Esq., M.R.C.S., Clifton; W. R. Parsons, Esq., Clifton; C. Bayston, Esq., Clifton; — Drew, Esq., Weston-super-Mare; — Gregory, Esq., Cheltenham; — Bolton, Esq., Clifton; — Coker, Esq., Clifton; S. Thompson, Esq., Clifton; — Council, Esq., Clifton; S. J. Hayman, Esq., Clifton; R. W. Osborne, Esq., Newport, Mch.; E. Weeks, Esq., Bristol; J. Smart, Esq., Bristol; — Blackwell, Esq., Plymouth; — Pearce, Esq., Bristol; Graham Young, Esq., Clifton; — Clark, Esq., Clifton.

On the motion of Mr. Gaine (Bath), seconded by Mr. W. R. Parsons, Clifton, Mr. W. R. Wood, I.D.S. (Brighton), was elected to the chair.

The CHAIRMAN said: It is with great pleasure that I preside at a meeting calculated to advance the position of the Dental profession. The profession is suffering very much from many unfavourable circumstances, which assist to retard its advancement. I believe that if the scheme for the foundation of a College of Dentists had been carried out, the present meeting would have been rendered perfectly unnecessary. We should by this time have been an independent college, standing fairly and nobly before the world. But now at the present moment we are in the same position that the barber surgeons were in, I think, the year 1813. I believe the Dentists are a useful body of individuals, and a more useful profession as regards their supplying the wants of suffering humanity than many other professions. They are a body of men who are respected, who are taken into sincere and sound friendship in many circles, and why not unite together for the advancement of their profession and interests? They are powerful, inasmuch as they have great individual influence in many circles. Then why not bring the profession into one common bond? They are useful and they know it, and

respected in many circles, and by not being bound together by properly organised principles of union, a number of individuals have got into the profession, and really brought about that discredit to which they were not entitled. I sincerely wish that I was younger in years, that I might devote more labour to the cause, but there is some little energy in me still, and I will do all I can to assist it. The object of the meeting has my most cordial support and sympathy. Our friends in Ireland have an arduous task before them, but it is one which I think must be attended with success. I am glad to see that great and glorious movements are taking place for the furtherance of these objects, and if there is a principle of unity pervading the business, I am sure that you will gain everything that it is right and needful you should possess.

The HON. SEC. (Mr. R. Rogers, Cheltenham), read letters from Messrs. Lawson, Hereford; N. Kiney, Exeter; Felix Weiss, London; S. L. Rymer, Croydon; A. Smith, Clifton; W. F. Cockburn, Gloucester; J. Robertson, Cheltenham; M. J. Cunningham, Salisbury; A. Heyman, Clifton; G. A. Jefferies, Clifton, &c., expressing regret at their inability to attend the meeting, and their sympathy with the movement.

The CHAIRMAN called upon Dr. Waite (Liverpool), to move the first resolution.

Dr. W. H. WAITE (Liverpool) said:—The resolution I have been asked to read is as follows:—"That we hail with satisfaction the efforts that are being made by the Dentists in Ireland to induce the Council of the Royal College of Surgeons in Ireland to institute a Dental Diploma, and we pledge ourselves to give them our cordial support." There are two considerations which conspire to render the present occasion specially interesting to myself. The first is that Bristol is my native city, and the second that this gathering of our provincial brethren has come together with common consent to consider, and I hope to promote the common welfare of our common calling. Apart from the special object of our meeting, I think there is much upon which we may fairly congratulate ourselves. It is about ten years ago since I first took the liberty of suggesting through the medium of the "British Journal of Dental Science" that the Odontological Society should establish local branches in some of the principal cities of the United Kingdom, and from that day to this I have never ceased to feel that the first desideratum was to disturb the isolation and thoroughly unprofessional state of feeling which had existed all too long among our provincial members. Of course the Odontological Society did not adopt my suggestion; indeed, it very soon after declared itself to be a purely scientific body, and had it not been for our good brother Sidney Wormald, of Stockport, and one or two others, who worked hard to get up the first Manchester meeting in 1875, I suppose we might have gone on until Doomsday before any effort would have been made to improve the condition of the provincials. However, we may, I think, congratulate ourselves not only that the first Manchester meeting was held, but upon the encouraging prospects of good results arising out of it, for I am told upon the best authority that there is a very fair probability, indeed, of our obtaining the two chief points of Mr. Fox's scheme, viz. registration of all existing practitioners, and compulsory education for all future members of our profession. Then, I think that we may congratulate ourselves that our brethren behaved themselves so well at the first meeting that they were

not afraid to meet again, and, indeed, one might almost say they have become enamoured of the idea of meeting together, for this is already the third Dental gathering which has been held within two months, and I believe that there are at least one or two more such events in anticipation. Were there no further ambition than the cultivation of a feeling of brotherhood, and the interchange of opinion which these meetings evoke, you will agree with me that the committee formed in Manchester on the 12th of May is already doing good service. The enterprise upon which that committee has embarked is fraught with the highest importance to our future well being. It contemplates possibilities, I may say probabilities, which if liberally responded to may in a very short time materially alter the position of a large section of our body, and so reverse the present unfortunate and disadvantageous proportion in which the qualified and unqualified stand towards each other. To-day the Dental profession may be said to consist of three separate and distinct sections: First, we have those who hold the diploma of the College of Surgeons of England (with a few holding other diplomas) numbering 369. Secondly, we have those, who although equally educated and competent—at any rate in the practical details of Dentistry—hold no diploma, numbering about 1000 or 1200 at least. And thirdly, we have a residue of those who have taken up Dentistry, some in connection with other business, some after failure in nearly every other business, and some from one cause and some from another, but all with very slender knowledge and ability, the absence of which renders it necessary to attract public attention by means of advertisements offering all sorts of inducements at ridiculously low rates. To put the case very clearly we have only one-fifth of our whole number holding any qualification, while four-fifths have no qualification. The object of our committee is to furnish the means for reversing these figures. We feel that the time is fully come when every practitioner who has been properly trained, and who pursues his calling in an upright and professional manner, ought to be able to accredit himself before the public as duly qualified. We feel that the public, who are of necessity ignorant of our internal economy, ought to have some criterion by which to ascertain the fitness or otherwise of any one who offers his services as a Dental Surgeon. Without indulging in any uncharitable spirit or remarks, we feel further that it is high time both in the interests of the public and of the profession, that a certain class of men should be prohibited from deceiving the public by assuming a designation, without having the knowledge or the skill which that designation implies. For these reasons, and because the College of Surgeons of England has practically shut its doors upon us, we are encouraging and striving to assist our brethren in Ireland in their attempt to induce the College of Surgeons in Dublin to establish a Dental diploma. Should this be done, there is little doubt that the second section of which I spoke just now will have the opportunity of obtaining the diploma upon fair and reasonable conditions. Whether such an opportunity shall be provided or not depends mainly upon the amount of response which is given to the appeals of our Committee through these meetings. It is a matter for each individual to consider and decide for himself. The tendency towards a recognised educational standard, assured by the licence or diploma of some authorised body, is thoroughly pronounced, not only in Dentistry but in every department of science and art. This tendency is one of the “signs of

the times," and no personal indifference or faint-heartedness can possibly check it. The question for you and me as individuals is, "Shall I go with the stream or be left behind." The alternative is one which I feel sure none of us will relish, and therefore, I would urge upon every one to support this movement with a present interest, and with the resolve that, as soon as preliminaries are arranged, he will be among the first to present himself for examination, and so set the example which, sooner or later, all must follow. Now, gentlemen, at the Leeds meeting I attempted to explain very briefly the position which the unqualified occupy, viewed from the side of the qualified, and to show that the assumption of superiority which is being exhibited in various ways, is not only unbecoming to so small a section, but detrimental to the interests of a much larger section. On the present occasion I should like to look very briefly indeed at the position of the unqualified, as viewed from the side of the advertising section, and here let me say that those who reside in this part of the country have a very faint conception of the enormous extent to which advertising prevails in the manufacturing districts. I have a few specimens clipped from the papers during the last two or three days, but no description can make you realise the keenness of competition which exists in some districts. [The speaker here created considerable amusement by reading extracts from a number of advertisements.] There are characteristics, however, which need to be noticed. First of all, the business these men do is purely mechanical. The prices of artificial teeth form the basis of rivalry, and this leads towards a wholesale sacrifice of the natural organs. I need not point out the evils involved in this. Secondly, the prices are far below what honest work can possibly be done for. Now, I do not know that we need interfere with any man who likes to put a single tooth in for two shillings, or a set for two pounds, provided he does his work well; but when a man calls himself a Dentist, and sends out inferior, worthless, ill-adapted work, he injures the whole profession, and we have a right to complain. If any one chooses to fill a tooth properly for one shilling let him do it, but when others are thinking out laboriously the causes of Dental deterioration, and struggling hard for the conservation of these important organs, men ought not to bring these efforts into disrepute by their cupidity and ignorance, and whenever they are found doing so we have a right to complain. The only effectual method of protesting against empiricism is to raise the standard of education, and the only effectual way of convincing the public of the ignorance of empirics is by drawing a definite line of demarcation between them and the educated practitioner. Suppose that all the influence and power represented by the thousand or so at present without any diploma were thrown into the scale with the influence and power of the 369 licentiates, can it be denied that the result would be a rapid enlightenment of the public and a consequent elevation of our calling? I submit that the most formidable antagonism we can oppose to the inroads of quackery is to raise the status of every respectable practitioner at the same time that you attempt to legislate for compulsory education in future. The former process is the complement of the latter, and I believe that no amount of legislation alone can, except by slow and tedious evolution, result in any real improvement in our condition. Gentlemen, the educated, but unqualified Dentist of to-day is, as Mr. Bright once said of the middle classes, like Issachar, a strong ass between two burdens. We have on one side of us 369 gentlemen assert-

ing that they are qualified, and informing the public in every conceivable way that we are unqualified. On the other side we are mixed up in public estimation with that residue to which I have already alluded. Between the two our position is anomalous. Laying aside vain regrets as to the causes which may have brought us hither, let us vigorously espouse deliverance from the land of the Philistines, and cheerfully accept the opportunity now afforded of testifying to the public that the majority of our profession are sufficiently educated to merit a qualification, and thus shall we lay the axe to the root of the upas tree of charlatanism, which has spread its deadly shadow of degradation and dishonour wherever the name of Dentist is known. The time will come when the science and art of Dental surgery will be fully acknowledged, as yielding scope for the exercise of high mental, moral, and physical attributes. Our lot has fallen on the period of transition. Be it ours faithfully to discharge the responsibilities of our time, and so hand down our profession to posterity in a nobler, grander, and purer condition than that in which we found it.

Mr. T. C. PARSONS (Clifton) rose to second the resolution. He said: It is with great pleasure that I second this resolution, and I must express the pleasure I feel at seeing so numerous a gathering of Dentists; it shows that a deep interest is felt in the cause in which we are engaged. There is no doubt that the present is the time when we must put our shoulders to the wheel and endeavour to get Dentistry out of the slough of despond into which it has fallen. I must beg you to excuse me saying more, because there are plenty of others who will give you the state of the profession better than I can and tell you what you ought to do. I must congratulate the chairman and Dr. Waite upon their addresses and express the pleasure I experienced in listening to such sentiments.

The resolution was then put to the meeting and carried.

Mr. ROGERS (Hon. Sec.), in giving some details of the committee's labours, said: Before going on to the next resolution I will read a telegram which I have received from Scotland, and according to it the Dentists in Edinburgh are likely to outshine their brethren in Ireland. The telegram says, "There is every likelihood of a diploma being granted in Scotland before it is in Ireland." I believe that many of you are not aware of the difficulties incurred in getting up this meeting, it has been a very arduous work, and I must tell you that I am much gratified to see such a body of gentlemen around me to-day. Many people with whom I have communicated have said, "It would be a good thing if the object of the meeting could be carried out;" others have promised to attend this meeting and have not put in an appearance, probably from unforeseen professional engagements. However, if we are to do anything for the benefit of the profession, it must be done at once, with a strong pull, a long pull, and a pull altogether. I have been in practice for nineteen years, and I am sure no man has taken greater interest in the movements of the Dental profession than I have from the moment that I entered it; and now I believe that the time has come that it is necessary for all members of the profession who really wish to raise the status of it to leave no stone unturned in its interests, but to visit their professional brethren, learn their opinions, and, if necessary even canvass the matter from house to house. All these meetings are attended with a certain amount of expense, and I should be glad if those

gentlemen who are really going to support us would send me in their names and subscriptions at the close of this meeting."

The CHAIRMAN.—Gentlemen, I feel such a deep interest in the movement that we are all engaged in here to-day, that I should like very much to propose the next resolution. I don't know whether a Chairman can propose a resolution or not. I shall, however, read it for you. "That this meeting, having heard with satisfaction the statements of the committee appointed at the meeting of Dentists held in Manchester, May 12th, pledges itself to support the committee in the course which it has adopted." He said: I shall be very pleased to give a subscription, and I will do my best to induce others in my neighbourhood to do as I have done. I have no doubt but that ultimately the efforts of the committee will be crowned with great success. The movement is now proceeding in the right direction, after, as it were, a great loss of time. In all movements a great deal of preaching frequently preceded the practice, but in the end the object was obtained. I only wish that there were many more like Dr. Waite in every town, the movement would soon be carried. His views are so clearly stated, so powerfully put, and so elegantly framed, that I fancy I might exclaim of him, "Thou art a great apostle of Dental reform." They had waited a very long time for such as he, and he hoped they would get many more like him. When the movement for the establishment of a college in England went down I had almost given up any idea of attaining our end, but my friend Mr. Rogers has inspired me with new zeal and energy, and I feel that it must be carried. I must ask you to support the resolution with unanimity; it is one quite in accordance with my views, or, believe me, I should not have proposed it.

Mr. GAINE (Bath) seconded the resolution.

Mr. SYDNEY WORMALD (Stockport) in supporting the resolution said: My name has become like household words, in movements of Dental reform. I have laboured for many years, I might say unceasingly and indefatigably for the last seven years, and now there are hopes of success. I cannot express the pleasure I feel at being present at this meeting; the very hearty and cordial way in which we have been received by our brethren here has made our visit a very pleasant one. I feel we are deeply indebted to our worthy secretary, Mr. Rogers, and to Mr. T. Parsons for the labour of getting up this meeting. The fact of Mr. Rogers being present at our Manchester meeting and also at our committee meetings in Liverpool and London, is a proof that he is deeply interested in this movement. I believe our object in meeting to-day is to further the interests of the Dental profession by supporting the Dentists in Ireland in their efforts to induce the council of the Royal College of Surgeons of Ireland to institute a Dental diploma. I believe the time has arrived when the question of a Dental diploma should be brought before the profession, not only in Ireland, but also in Scotland. I think the time has come when some effort ought to be made by the whole profession in the United Kingdom for adopting some means by which a Dental diploma might be instituted upon reasonable and accessible terms. I believe a Dental qualification is necessary for the protection of the public, and that it would tend to elevate the profession in public opinion, and I hope that those who already have the honour to hold a Dental diploma will see it to be to their interest to assist us in this movement. They had already heard much that was of interest upon

the subject, and no doubt they had all read reports of the meetings of Manchester and Leeds. When speaking upon the question of Dental reform at the Leeds meeting I observed that the great amount of good which had been done during the last twenty years had been confined within very narrow limits, and that no great effort had been made to extend that good upon a broad principle for the benefit of the profession at large. Now, I wish to call your attention for a few moments to one or two remarks upon that point. I will speak of the profession in Manchester to illustrate and confirm my assertion, because I know more of the Dental profession in that city than any other place. There are over 220 Dentists in Manchester; of this number there are seven who hold the diploma of L.D.S., two by curriculum, and five by grace. I will include Bolton, Bury, Rochdale, Oldham, Ashton, Stockport, and Macclesfield, as towns within a radius of ten and twelve miles, and their surroundings, which makes an additional number of about ninety, none of whom hold a Dental diploma. This shows a number of 310, and only 7 of that 310 hold a Dental diploma. Now, I take Manchester as a sample of every large centre, such as London, Liverpool, Leeds, Birmingham, Sheffield, Bristol, and others, to stand proportionately the same throughout England, Ireland, Scotland, and Wales. And I ask you to look at the very small percentage of the diplomaed part of the profession. I ask you to look this question fairly in the face, and you will be irresistibly compelled to ask why such a state of things is allowed to exist. Is it because the profession is not sufficiently educated, or that their social position will not bear the test of respectability? I will leave the profession to answer that question for itself. I will avoid any question as to the position of the profession in Manchester. I hold it to be second to none in its respectability. The movement is one which must come to the front and be discussed by the whole profession, and with the power we have in our ranks it must be attended with success. It is not desirable that the object, if attained, shall be attended with any restrictions, but that it shall be open and free to all who may avail themselves of it according to the terms imposed by the Council of the Royal College of Surgeons, and subject to the arrangements which they may make. I ask you to assist the committee in their efforts to support the endeavours of their brethren in Ireland to induce the College of Surgeons of Ireland to institute a Dental diploma upon such terms as may be within the reach of all practitioners. It is an object well worthy of our support, and one which we believe will facilitate the great and all-important question of legislation, without the accomplishment of which the Dental profession will never become a properly recognised body. I ask you as Englishmen to assist one another to obtain that which will do an act of justice to the public and honour to the profession. I have great pleasure in supporting the resolution.

Mr. GAINÉ, M.R.C.S. (Bath), said: In 1859, when the College of Dentists was established, I thought it would be the means of improving the status of the profession, and I joined it. This institution was subsequently abandoned in favour of the L.D.S. of the Royal College of Surgeons, and practically the profession has been in a state of chaos ever since. In 1873, when it was proposed that the Royal College of Surgeons should again open the doors to admit those who had not availed themselves of the opportunity offered them of taking the license

between 1859 and 1865, I wrote to the two Dental journals, and suggested that all those who were then practising as Dentists and whose previous conduct had been such as to render themselves worthy of it should have the license granted them; also those who had commenced their pupilage prior to that time; and then after a lapse of two or three years the doors should be shut and the membership made compulsory. If they wished to raise the status of the profession they should become surgeons as well as Dentists. We want the College of Surgeons of Ireland and Scotland as well to support us in endeavouring to shut out quackery. I have always been of opinion that in every large town where there was a medical school there should be a special class for the study of Dentistry attached.

The SECRETARY: I should say that it is intended to hold meetings in various centres as soon as possible. The next large meeting will be held in Ed'nburgh in October. I need not tell you that if we wish to do anything for the profession it should be done at once.

Mr. OSBORNE (Newport) said: I have been listening with a considerable degree of interest to the speeches which have been made at this meeting. Two or three things have come to my ears while listening to the speeches this afternoon, and if I should speak in a slightly discouraging way I hope that you will understand it is not because I do not wish to see any changes or improvements in the Dental profession, but because I do not quite see the drift of some of the arguments used. I do not understand what the movement is going to do to meet the grand difficulties stated by Dr. Waite. I listened to his speech with very great interest and gratification, but it appeared from one or two points in his address bearing upon the question of Dental reform that a great amount of the quackery exhibited was that of qualified Dentists. I am not an enemy to the wish that the Dental profession should consist of qualified members, but when qualified men support quackery what are we poor unqualified men to do? The movement now being made is, as I understand it, to open the doors of the College of Surgeons for Scotland and Ireland and offer another chance for the Dental profession to avail themselves of the opportunity for receiving diplomas which will stamp them in the eyes of the law and the public as qualified men. Well, I should rejoice to see this movement succeed. Personally I feel that it would be nothing to me, owing to the weakness of my health, but being therefore not in a position to benefit by the proposed scheme, I can speak all the more dispassionately upon it. This is the point in my mind: can you take those 2,000 unqualified Dentists, so to speak, like horses to the water, i.e., the College of Surgeons, and make them drink? Can you make these unqualified men agree to your mode of becoming qualified on the terms offered? I have watched this movement from the beginning. The breaking down of the scheme for a college of Dentists was to me a great disappointment. I was then a young practitioner, and I at once gave in my name and subscription at the starting of it, feeling anxious to become, from the point of view then held out, a qualified Dentist. On the failure of the scheme I took umbrage and held aloof from the alternative plan altogether. The doors of the College of Surgeons were opened a second time, but I was then unable to avail myself of the opportunity offered through ill-health. What I wish to point out, however, is the manifest feeling of inferiority and depen-

dance upon others that this movement gives expression to. Why does the Dental profession seek its honour and dignity from another profession? I read a fable when a boy that seems to illustrate my meaning better than anything else I can just now think of. It is that of the frog and the ox, where the frog in trying to puff himself out to the size of the ox only succeeded in bursting himself. Now, the Dental frog may become a very well-developed one if it does not try to emulate the frog in the fable. I should like to see the Dental profession standing upon its own legs, going to Parliament for its own authority, making its own dignity, and taking its own status. It may be thought by some that the grand thing to be done is to obtain Dental diplomas through the aid of the various colleges of surgeons, but I fear the plan is doomed to failure on the ground that the great majority of the profession would prefer to be Dentists pure and simple.

Mr. BALKWILL (Plymouth) said: I do not take up so discouraging a position as the last speaker, and I think the L.D.S. has been doing a great amount of good. It must be remembered that the education of the hundred and twenty-seven who had passed by curriculum had cost on an average not less than £400 each, which represented more than £50,000, to say nothing of the cost of the education of those who passed without curriculum. This was a vested interest of some amount, and which the Royal College of Surgeons of England had found themselves obliged to respect. His sympathies had always been with the main body of the Dentists as distinct from the surgeons, and he hoped nothing would be done or said which might lead to a division between the holders of the L.D.S. and the other good men in the profession. If the proposed movement with regard to the Colleges of Surgeons of Scotland and Ireland would have the effect of bringing most of the respectable members of the profession together in one united body, it would be a very good result.

Mr. SMART (Bristol) said: As reference has been made to the old College of Dentists I should like to sympathise very much with some of the remarks that have fallen from previous speakers and as to the expediency of the Dental profession uniting in the establishment of a distinct body rather than being connected with another, however respectable and dignified. I cannot overlook my own obligations to the late College. When relinquishing the medical profession, for which I was articled, and adopting Dentistry, I gladly welcomed and availed myself of the College of Dentists' Examining Board; and now, holding a diploma bearing the names of Dr. B. W. Richardson, Mr. Spencer Wells, and several others of leading position and influence, I am less disposed to favour another project, but should hail with pleasure a scheme by which the old College of Dentists might be revived.

The CHAIRMAN then put the resolution to the meeting and it was carried.

The CHAIRMAN said: Having heard the observations upon the various points with intense satisfaction, I must say that I look forward with pleasure to a better future for Dentistry, but to obtain this it must be shown that there is a determination to have reform in our body. The gentlemen who had spoken recently had referred to the old College of Dentists and expressed a desire for its revival, and they would, perhaps, bear in mind that in his opening remarks he had ex-

pressed an opinion that if that College had been carried on there would have been no necessity for the present movement. The instruction then would have been that simply connected with the profession, and a man would not have had to study branches of science and medicine which he would never be called upon to use. It was time that they roused themselves and placed the profession in a position far above that it occupied at present, not only for themselves should they do so, but for the sake of those who came after them, for there were school boards at work teaching children to read, and write, and think, and if they did not adopt some system at once they would be completely outdone by the quacks, and would not have a leg left to stand upon. I was one of those who took a very active part in the question of the establishment of a Dental College, and the other day I found some papers relating to the movement, one of which bore the signatures of upwards of 3,000 members of the College of Physicians and the College of Surgeons declaring that our interests would be best attained by a college of our own. The speaker read copious extracts from these papers, and then went on to say that it was clear that some other arrangement than the present should be made, as it was apparent from the figures quoted by Dr. Waite in his address, that not 400 of the profession had availed themselves of the Dental Diploma offered by the Royal College of Surgeons of England. At the same time he thought it was right that they should assist their brethren in Ireland to the greatest possible extent.

Dr. WAITE said: There is one duty which we must not omit, but before I proceed to it I must express the pleasure I have experienced in listening to such varied opinions. Mr. Osborne failed to follow me through the first few sentences of my remarks. What I endeavoured to show was that the Dental reform movement proper, that is, the efforts of the committee which was elected in 1875 at Manchester to carry out Mr. Fox's scheme for the registration of existing practitioners and compulsory education of future members, was in itself distinct from the movement which we have met to advocate to-day, and still at the same time a parallel movement if they could understand it so. They were both working for precisely the same end. That brings me to the second point, whether they were justified in endeavouring to obtain importance through the College of Surgeons, instead of trying to form a separate body. Well, my sympathies are in favour of a separate body. I myself belonged to the original College of Dentists. Seeing, however, that the L.D.S. is an accomplished fact of nearly twenty years' standing, the Committee esteem it the wisest policy to endeavour to carry out their purpose upon the same plan, that is, by seeking to induce the licensing bodies in Ireland and Scotland to grant a qualification. Should this fail, there are those amongst us who will not hesitate to unfurl the banner of a separate body, and go in for the establishment of a distinct College of Dentists. The great question before them was the elevation of the profession. The public at present have no means of discerning between the man who has had a proper training, and the man who has taken up Dentistry merely as a trade. I maintain that if the College had offered greater facilities, as they were asked to do, the English diploma would have come within the reach of every educated practitioner. This having been denied us, we seek a qualification elsewhere. I beg to move a vote of thanks to our Chairman.

Mr. COKE seconded the resolution.

Mr. WINTERPRING, in supporting the resolution, said: I do not think there is any desire on the part of the meeting to deviate from the course which the Committee had taken.

The CHAIRMAN, in returning thanks, said: I think it is of great importance to the general public that we should be supported with energy in our plans and arrangements, the objects of which are so conducive to the health and comfort of the community at large.

This concluded the proceedings, and the meeting separated.

The Committee would be glad if any gentlemen, residing in central districts, would intimate to the honorary secretaries their willingness to assist them by organising meetings similar to those already held, where an attendance of a dozen gentlemen or upwards could be secured. A deputation from the Committee will always be most happy to attend such meetings and explain their views.

Review of Books.

An Address on the Value of Dental Education as a Means to Dental Reform. By OAKLEY COLES, L.D.S., R.C.S.—London: Hardwicke and Bogue, 1877.

This address, delivered by the Dean, at the opening of the Summer Session of the National Dental College, is full of interest, and, at this critical period of our profession, will be read with pleasure not only by the student, but also by the well-meaning practitioner.

Of the various aspects in which the question is considered by Mr. Coles we quote the following:—

“Lest, however, you should think that I am giving undue prominence to the educational, rather than to the political aspect of Dental Surgery, let me endeavour to justify my position by an avowal of my profound faith in the political power for good of a perfect Dental Education. Let me make this statement clearer. We are all of us painfully aware of the objectionable advertisements with which our press is disfigured. You have probably also seen from time to time those curious specimens of our art, which are displayed in various windows and in show cases throughout the metropolis to the gaze of an ever credulous public. Now if you make the acquaintance of some of the gentlemen who adopt this method of procuring practice, you will, having recovered from the shock of their innate vulgarity, be struck by their great ignorance; plausibility will be found to take the place of skill, and a low cunning will answer the purpose of intelligence. What conclusion can we come to from this—simply that vulgarity is the invariable concomitant of ambitious ignorance. What inference may we then draw? We may, I think, fairly presume that, as we send forth fully educated, qualified Dental Surgeons, that which has been such a thorn in the flesh to us, will in the next generation have disappeared. You may naturally ask, what are the grounds on which such a hope is based. My reply is, the best of all grounds—experience; for it is a

notable fact, which cannot be too widely known, that—as shown by a recently published list—out of 390 Dental Licentiates, only seven or eight were found to be advertising as defined by the laws of the Odontological Society. This, surely, is a matter for congratulation, whilst it indicates, I think with great clearness the direction in which we should work for reform in the future. . . . I believe most thoroughly that if every person calling himself, or even herself, dentist were placed in possession of the Dental Diploma to-morrow, by what is termed an act of grace, we should fail to see any improvement in the real condition of the Dental Profession. Our social status would remain precisely the same as if no such 'graceful' act had taken place, whilst professional skill would obviously remain as it is."

These are statements of great practical value, and it would be well if they were fully and rightly estimated by those gentlemen who take part in the movements which are now occupying the attention of the profession.

In considering the subject of education we have the definition that "Education properly understood is the training of the mind to observe, record, and reason in such a way that the mental capacities may be developed to the fullest extent, and kept in the highest degree of perfection and usefulness." And again:—

"Being impressed with the process by which all knowledge should be acquired, and guided in your aim by the utility which you have always before you as the end in view, you will understand with a more perfect comprehension the value of the studies that are arranged for you in your curriculum. Yet I would warn you against any strict margin to your studies. In every department of science, art, and literature, carry with you the observing and receptive faculties; but whether you note much or little, I beg of you to cultivate accuracy. A general knowledge of any subject (as J. Stuart Mill has pointed out) is always useful, if by a general knowledge you understand a thorough mastery of that which you have observed, and not merely a superficial acquaintance with the matter. By this means, and by this means only, can you make your necessary store of knowledge available for all the purposes of life; for assuredly there is no more mischievous and unfortunate man than he who knows many things superficially, but nothing with accuracy or precision."

Passing on to consider the relative benefits to be derived from the study of the two curricula, and the value of their finalities, and the possession of the Membership and the L.D.S. of the College of Surgeons, Mr. Coles says:—

. . . "By this means you will be qualifying for the full membership of the college, at the same time that you are preparing for the Dental examination. And to everyone who can accomplish it I would say, make yourselves possessors of the general qualification, in addition to the special one.

"I do not say, for I do not believe, that it will make you better dentists; but it will make you better educated men, since it compels a

wider field of study and a more strenuous mental effort, and with this object I desire that you may be members—in fact, to sum up the matter in a few words, the possession of the Dental Diploma is essential, but to have the Surgical Diploma also is expedient.

“If the Dental Licentiates are left alone, they possess sufficient ambition to raise themselves to the standard of other professional men, either by extending the curriculum of the College, or by raising the examinational test; but three or four hundred intelligent men will not be driven, though they may be drawn, and a sudden attempt to alter the value and lower the esteem in which the Dental Diploma is held, can only end in disaster, if not defeat. To dishearten those who are working for Dental Reform by educating others up to an appreciation of the value of an uniform standard, is certainly retrogressive progress; for as surely as you must have a platform before you can take a long jump, so surely must you have the two thousand dentists in this kingdom impressed with the value of the Dental Diploma ere you can make them think of the necessity for any other and more general degree.”

This succulent address is pregnant with the best advice to the student, and is an able consideration of its title worthy of the attention of all.

The form and style in which the address is got up bear a fraternal likeness to several other such orations already presented to members of the profession.

Cyst of the Upper Jaw.

At Guy's Hospital a man twenty-four years of age, presented a fluctuating swelling of the size of a walnut on the right side of the face half an inch below the orbit. In the mouth, the tumour projected along the outer margin of the gum; it was fluctuating and not painful. This had been noticed during the last two and a-half years, and had been lanced twice, when “stuff like coffee-grounds” is said to have been evacuated, but the wound was not kept open. Adjacent to the tumour was a carious bicuspid which had not been tender, but the man had some face ache three years ago, *i.e.*, before the formation of the cyst. The canine tooth was absent on this side, the lateral incisor being in contact with the bicuspid, and there was no history of its extraction; possibly then the cyst may be dentigerous. There was no discharge from the nose or other sign of disease of the antrum. A seton was then passed through the cyst from the mouth by means of a curved needle, and a clear slightly yellow mucoid fluid was evacuated. A crater of bone was then felt surrounding the cyst at its base. Probably the adjacent carious tooth will have to be extracted. A radical measure would be to lay the cyst freely open and stuff it with lint. A finger in the cyst would enable the diagnosis to be confirmed.

A young woman also came under treatment a month ago with a mucous cyst of the upper jaw of two or three years' growth, producing considerable deformity. It had previously been lanced two or three times. A seton was inserted and tied in; clear mucoid matter exuded, suppuration followed; a carious tooth adjacent was then extracted. The patient is now free of all trouble but a depression in the maxillary bone.—*British Medical Journal*.

EDUCATIONAL SECTION.

The information contained in the following pages relates mainly to the education necessary for the Dental Diploma of the Royal College of Surgeons. Further particulars regarding the hospital routine for the Membership of the College will be found in the Students' Number of the Medical Papers (published in the second week in September), or in the calendar of any of the General Hospitals, which may be obtained on application to the Dean of the respective school.

SUGGESTIONS TO STUDENTS.

Before commencing his Professional Education, the Student must pass a Preliminary Examination in Arts.

The Examination most to be recommended is the Matriculation of the University of London (see p. 136) as it will enable the Student subsequently to present himself for an University degree, should he desire to do so.

Having received a Certificate of his Preliminary Examination, and Cards of Admission to Lectures and Hospital Practice, it will be necessary to register the same at the College of Surgeons from the 1st to the 15th of October. If the Student enter a General Hospital it will be necessary to register also at the Medical Council Office, 315, Oxford Street, within fifteen days of commencing his professional studies. The commencement of such studies will not be recognised by any of the qualifying bodies as dating earlier than fifteen days before the time of registration.

Royal College of Surgeons of England.

Regulations relating to the Diploma in Dental Surgery.

EDUCATION.

Candidates are required to produce the following Certificates:—

1. Of being twenty-one years of age.
2. Of having been engaged during four years in the acquirement of professional knowledge.
3. Of having attended, at a School or Schools recognized by this College, not less than one of each of the following Courses of Lectures, delivered by Lecturers recognized by this College, namely.—Anatomy, Physiology, Surgery, Medicine, Chemistry, and Materia Medica.
4. Of having attended a second Winter Course of Lectures on Anatomy, or a course of not less than twenty Lectures on the Anatomy of the Head and Neck, delivered by Lecturers recognized by this College.
5. Of having performed Dissections at a recognized School during not less than nine months.
6. Of having completed a Course of Chemical Manipulation, under the superintendence of a Teacher or Lecturer recognized by this College.
7. Of having attended, at a recognized Hospital or Hospitals in the United Kingdom, the Practice of Surgery and Clinical Lectures on Surgery during two Winter Sessions.
8. Of having attended, at a recognized School, two Courses of Lectures upon each of the following subjects, namely:—Dental Anatomy and Physiology (Human and Comparative), Dental Surgery, Dental Mechanics, and one Course of Lectures on Metallurgy, by Lecturers recognized by this College.
9. Of having been engaged, during a period of not less than three years, in acquiring a practical familiarity with the details of Mechanical Dentistry, under the instruction of a competent Practitioner.
10. Of having attended at a recognized Dental Hospital, or in the Dental department of a recognized General Hospital, the Practice of Dental Surgery during the period of two years.

N.B.—The Students of the London Schools are required to register the above Certificates at this College; and special Returns will be required from the Provincial Schools.

NOTE.—All Candidates who shall commence their Professional Education on or after the 1st of October, 1877, will, in addition to the Certificates enumerated in the foregoing Clauses, be required to produce a certificate of having prior to such commencement passed the Preliminary Examination in General Knowledge for the Diploma of Member of the College, or an examination recognized as equivalent to that examination.

CANDIDATES who were in Practice as Dentists, or who had commenced their Education as Dentists prior to September, 1859—the date of the Charter—and who are unable to produce the Certificates required by the foregoing Regulations, shall furnish the Board of Examiners with a

Certificate of Moral and Professional Character, signed by two Members of this College.*

together with answers to the following inquiries :—

- | Name | Age | Professional Address. |
|---|-----|-----------------------|
| If in practice as a Dentist, the date of the commencement thereof. | | |
| Whether Member or Licentiate of any College of Physicians or Surgeons of the United Kingdom; and, if so, of what College. | | |
| Whether Graduate of any University in the United Kingdom; and, if so, of what University; and whether Graduate in Arts or Medicine. | | |
| The date or dates of any such Diploma, Licence, or Degree. | | |
| Whether Member of any Learned or Scientific Society; and, if so, of what. | | |
| Whether his Practice as a Dentist is carried on in connection with any other business; and, if so, with what business. | | |
| Whether, since September, 1859, he has employed Advertisements or public Notices of any kind in connection with the practice of his Profession. | | |
| The particulars of Professional Education, Medical or Special. | | |
| The Board of Examiners will determine whether the evidence of character and education produced by a Candidate be such as to entitle him to Examination. | | |

EXAMINATION.

- The examination is partly written and partly oral.
- The written examination comprises General Anatomy and Physiology, and General Pathology and Surgery, with especial reference to the practice of the Dental Profession.
- The oral practical examination comprises the several subjects included in the curriculum of professional education, and is conducted by the use of preparations, casts, drawings, &c.
- Members of the College, in the written examination, will only have to answer those questions set by the Section of the Board consisting of persons skilled in Dental Surgery; and in the oral examination will be examined only by that Section.
- A Candidate whose qualifications shall be found insufficient will be referred back to his studies, and will not be admitted to re-examination within the period of six months, unless the Board shall otherwise determine.

Examinations will be held in January, June, and October.

The fee for the Diploma is Ten Guineas, over and above any stamp duty.

NOTE.—A ticket of admission to the Museum, to the Library, and to the College Lectures, will be presented to each Candidate on his obtaining the Diploma.

PRELIMINARY GENERAL EDUCATION AND EXAMINATION.

- I. Candidates who commenced their Professional Education on or after the 1st of January, 1861, will be required to produce one or other of the following Certificates :—

*N.B.—In the case of Candidates in practice or educated in Scotland or Ireland, the Certificate of moral and professional character may be signed by two Licentiates of the Royal College of Surgeons of Edinburgh, or the Faculty of Physicians and Surgeons of Glasgow, or of the Royal College of Surgeons in Ireland, as the case may be.

1. Of Graduation in Arts at a University recognized for this purpose. The following are the Universities at present recognized, viz. :—

OXFORD ; CAMBRIDGE ; DUBLIN ; LONDON ; DURHAM ; QUEEN'S UNIVERSITY IN IRELAND ; EDINBURGH ; GLASGOW ; ABERDEEN ; and ST. ANDREW'S.

CALCUTTA ; MADRAS ; and BOMBAY.

CANADA.—McGill College, Montreal ; and Queen's College, Kingston.

2. Of having passed an Examination for Matriculation, or such other Examination as shall, in either case, from time to time, be sanctioned by the Council of this College, at a University in the United Kingdom, or at a Colonial or Foreign University recognized by the Council of this College.

The following are the Examinations at present recognized under this Clause (No. 2), viz. :—

OXFORD.—Responsions or Moderations.

Middle-Class Examinations, Senior, the Certificates to include Latin and Mathematics.

CAMBRIDGE.—Previous Examination.

Middle-Class Examinations, Senior, the Certificates to include Latin and Mathematics.

OXFORD and CAMBRIDGE.—“Schools Examination Board,” the Certificates to include the several subjects required in the Preliminary Examination of the College.

Junior Local Examinations. The Certificates to include Latin and Mathematics, and one optional subject, similar to those included in Part II. of the Regulations.

DUBLIN.—Entrance Examination.

LONDON.—Matriculation Examination.

DURHAM.—Examination of Students in Arts in their second and first years.

Middle-Class Examinations, Senior, the Certificates to include Latin and Mathematics.

Registration Examination, for Medical Students.

QUEEN'S UNIVERSITY IN IRELAND.—Two years' Arts Course for Diploma of Licentiate in Arts.

Preliminary Examinations at end of B.A. Course.

Middle-Class Examinations, the Certificates to include Latin and Mathematics.

Matriculation Examinations.

EDINBURGH ; ABERDEEN ; GLASGOW ; and ST. ANDREW'S.—Preliminary or Extra Professional Examinations for Graduation in Medicine.

CALCUTTA ; MADRAS ; and BOMBAY.—Matriculation Examination.

CANADA.—Queen's College, Kingston ; Matriculation Examination.

Preliminary Examination of Students in Medicine ; McGill College, Montreal ; Bishop's College, Montreal ; University College, Toronto ; University of Trinity College, Toronto ; Victoria College, Toronto ; University of Laval, Quebec—Matriculation Examinations.

NOVA SCOTIA.—King's College, Windsor—Matriculation Examinations—Responsions. New Brunswick ; Fredericton—

Matriculation Examination. Dalhousie College and University, Halifax—Matriculation Examination.

AUSTRALIA.—Melbourne—Matriculation Examination, with a Certificate that the Student has passed an Examination in Latin. Sydney—Matriculation Examination. Adelaide; South Australian Institute.

UNIVERSITY OF THE CAPE OF GOOD HOPE.—Matriculation Examination.

NEW YORK.—Bellevue Hospital Medical College—Matriculation Examination.

3. Of having passed the Preliminary Examination for the Fellowship of this College.
 4. Of having passed the Preliminary Examination of the Royal Colleges of Surgeons in Ireland and of Edinburgh, or of the Faculty of Physicians and Surgeons of Glasgow.
 5. Of having passed the Examination in Arts of the Society of Apothecaries of London, or of the Apothecaries' Hall of Ireland.
 6. Of having passed the First-Class Examination of the College of Preceptors.
 7. Of having obtained the Testamur of the Codrington College, Barbadoes.
 8. Of having obtained the Degree of Associate of Arts granted by the Tasmanian Council of Education, with a Certificate that the Student has been examined in Latin and Mathematics.
 9. Of having passed the Voluntary Examinations of Christ's College, Canterbury, New Zealand, the Certificate to include all the subjects required from time to time in the Preliminary Examination of the College.
- II. Candidates who shall not be able to produce one or other of the foregoing Certificates will be required to pass an Examination in English, Classics, and Mathematics, conducted by the Board of Examiners of the College of Preceptors, under the direction and supervision of this College.

The following are the subjects of the Examination referred to in the foregoing paragraph for December, 1876, and until further notice, viz. :—

PART I.—COMPULSORY SUBJECTS.

1. Writing from dictation.
2. English Grammar.
3. Writing a short English composition; such as a description of a place, an account of some useful or natural product, or the like.
4. Arithmetic. No Candidate will be passed who does not show a competent knowledge of the first four rules, simple and compound, of Vulgar Fractions, and of Decimals.
5. Questions on the Geography of Europe, and particularly of the British Isles.
6. Questions on the outlines of English History, that is, the succession of the Sovereigns and the leading events of each reign.
7. Mathematics, Euclid, Books I. and II., or the subjects thereof; Algebra to Simple Equations inclusive.
8. Translation of a passage from the second book of Cæsar's Commentaries, "De Bello Gallico."

PART II.—OPTIONAL SUBJECTS.

Papers will also be set on the following six subjects ; and each Candidate will be required to offer himself for examination on one subject at least, at his option ; but no Candidate will be allowed to offer himself for examination on more than four subjects :—

1. Translation of a passage from the first book of the Anabasis of Xenophon.
 2. Translation of a passage from X. B. Saintine's "Picciola."
 3. Translations of a passage from Schiller's "Wilhelm Tell."
- Besides these Translation into English, the Candidate will be required to answer questions on the Grammar of each subject, whether compulsory or optional.
4. Mechanics. The questions will be chiefly of an elementary character.
 5. Chemistry. The questions will be on the elementary facts of Chemistry.
 6. Botany and Zoology. The questions will be on the classification of Plants and Animals.

The quality of the handwriting and the spelling will be taken into account.

N.B.—Each Candidate [*who has not at a previous Examination paid the amount*] is required to pay a Fee of £2 on the morning of the first day of the Examination prior to his admission thereto. The next Examination will be held in September. The exact dates of the Examination will be duly advertised when fixed in the Journals. Candidates are required to send in the prescribed forms of application not less than three weeks before the commencement of the Examination.

Note.—A Candidate, in order to qualify for the Fellowship, is required, in addition to the subjects included in Part I., to pass in Greek and in French or German, and in one at his option of the remaining subjects in Part II.

(Regulations for the Membership, see p. 160.)

University of London.

REGULATIONS FOR MATRICULATION.

The Examination shall be conducted by means of Printed Papers ; but the Examiners shall not be precluded from putting, for the purpose of ascertaining the competence of the Candidates to pass, *vivâ voce* questions to any Candidate in the subjects in which they are appointed to examine.

Candidates shall not be approved by the Examiners unless they have shown a competent knowledge in each of the following subjects, according to the details specified under the several heads :—

1. Latin ;
2. Any two of the following Languages :—Greek, French, and German ;
3. The English Language, English History, and Modern Geography ;
4. Mathematics ;
5. Natural Philosophy ;
6. Chemistry.

The following are the particulars of the foregoing subjects of Examination :—

LANGUAGES.

Latin.

One Latin subject, to be selected by the Senate one year and a half previously from the works of the undermentioned authors:

Virgil . . One Book of the *Georgics*, and One Book of the *Æneid*.

Horace . . Two Books of the *Odes*.

Sallust . . The Conspiracy of *Catiline*, or the War with *Jugurtha*

Cæsar . . . Two Books of the *Gallic War*.

Livy . . . One Book.

Cicero . . De *Senectute* or De *Amicitia*, with One of the following Orations:—Pro *Lege Manilia*, one of the four *Catilinarian* Orations, Pro *Archia*, Pro *M. Marcello*.

Ovid . . . One Book of the *Metamorphoses*, and One Book of the *Epistles* or *Heroides*.

The Paper in Latin shall contain passages to be translated into English, with questions in History and Geography arising out of the subjects of the book selected. Short and easy passages shall also be set for translation from other books not so selected. A separate Paper shall be set containing questions in Latin Grammar, with simple and easy sentences of English to be translated into Latin.

Greek.

One Greek subject, to be selected by the Senate one year and a half previously from the works of the undermentioned authors:

Homer . . One Book.

Xenophon One Book.

The Paper in Greek shall contain passages to be translated into English, with questions in Grammar, and with questions in History and Geography arising out of the subjects of the book selected. Short and easy passages shall also be set for translation from other books not so selected.

French.

The Paper in French shall contain passages for translation into English, and questions in Grammar, limited to the *Accidence*.

German.

The Paper in German shall contain passages for translation into English, and questions in Grammar, limited (except when German is taken as an alternative for Greek) to the *Accidence*.

THE ENGLISH LANGUAGE, ENGLISH HISTORY, AND MODERN GEOGRAPHY.

Orthography: Writing from Dictation: The Grammatical Structure of the Language.

History of England to the end of the Seventeenth Century, with questions in Modern Geography.

MATHEMATICS.

Arithmetic.

The ordinary Rules of Arithmetic.

Vulgar and Decimal Fractions.

Extraction of the Square Root.

Algebra.

Addition, Subtraction, Multiplication, and Division of Algebraical Quantities.

Proportion.

Arithmetical and Geometrical Progression.**Simple Equations.****Geometry.**

The First Four Books of Euclid, or the subjects thereof.

NATURAL PHILOSOPHY.**Mechanics.**

Composition and Resolution of Statical Forces.

Simple Machines (*Mechanical Powers*):—Ratio of the Power to the Weight in each.

Centre of Gravity.

General Laws of Motion, with the chief Experiments by which they may be illustrated.

Law of the Motion of Falling Bodies.

Hydrostatics, Hydraulics, and Pneumatics.

Pressure of Liquids and Gases, its equal diffusion, and variation with the depth.

Specific Gravity, and modes of determining it.

The Barometer, the Siphon, the Common Pump and Forcing-Pump, and the Air-Pump.

Optics.

Laws of Reflexion and Refraction.

Formation of Images by Mirrors and Simple Lenses.

Heat.

Its sources. Expansion. Thermometers—relations between different Scales in common use. Difference between Temperature and Quantity of heat. Specific and Latent heat. Calorimeters. Liquefaction. Ebullition. Evaporation. Conduction. Convection. Radiation.

CHEMISTRY.

Chemistry of the Non-Metallic elements; including their compounds as enumerated below—their chief physical and chemical characters—their preparation—and their characteristic tests.

Oxygen, Hydrogen, Carbon, Nitrogen. Chlorine, Bromine, Iodine, Fluorine. Sulphur, Phosphorus, Silicon.

Combining Proportions by weight and by volume. General nature of Acids, Bases, and Salts. Symbols and Nomenclature.

The Atmosphere—its constitution; effects of Animal and Vegetable life upon its composition.

Combustion. Structure and properties of Flame. Nature and composition of ordinary Fuel.

Water. Chemical peculiarities of Natural waters, such as rain-water, river-water, spring-water, sea-water.

Carbonic Acid. Carbonic Oxide. Oxides and Acids of Nitrogen. Ammonia. Olefiant Gas, Marsh Gas, Sulphurous and Sulphuric Acids, Sulphuretted Hydrogen.

Hydrochloric Acid. Phosphoric Acid and Phosphuretted Hydrogen. Silica.

The Examinations shall be conducted in the following order :—

MONDAY.

Afternoon, 2 to 4. Latin.

4 to 6. Latin Grammar and Composition.

TUESDAY.

Morning, 10 to 1. Greek or German.*Afternoon*, 3 to 6. French or German.

WEDNESDAY.

Morning, 10 to 1. Arithmetic and Algebra.*Afternoon*, 3 to 6. Geometry.

THURSDAY.

Morning, 10 to 1. English Language.*Afternoon*, 3 to 6. English History.

FRIDAY.

Morning, 10 to 1. Natural Philosophy.*Afternoon*, 2 to 5. Chemistry.

Fee, £2.

The Society of Apothecaries, London.

REGULATIONS FOR EXAMINATION IN ARTS.

THIS Examination will be held at the Hall of the Society on Friday and Saturday, January, 26th & 27th,

April, 27th & 28th,

September, 28th & 29th.

The Examination will be conducted by means of Printed Papers.

Candidates will be examined in the following Branches; and no Candidate will be approved unless he show a competent knowledge of each Branch of the Examination:—

I. The English Language.

II. The Latin Language.

III. Mathematics.

IV. One of the following subjects, at the option of the Candidate:—

(a) Greek.

(b) French.

(c) German.

(d) Natural Philosophy.

The Examinations will take place in the following order:—

Friday Morning,
10 to 11.

} English.

Friday Morning,
11 to 1.

} Latin.

Friday Afternoon,
2 to 4.

} Mathematics.

Saturday Morning,
10 to 12.

} The Fourth, or Optional Branch.

After the conclusion of the Examination, the Examiners will publish Lists of such Candidates as have passed, arranged in two classes: the names in the first class will be placed in order of merit; those in the second class in alphabetical order. In the course of the following week Certificates will be forwarded by post to each of the successful Candidates.

SYLLABUS OF SUBJECTS FOR EXAMINATION, 1877.

I. *The English Language.*

The leading features of its History. Its Structure and Grammar.
English Composition.*

II. *The Latin Language.*

January Examination. Cæsar; De Bello Gallico, Book V.

April Examination. Cicero; De Amicitia.

September Examination. Horace; Odes, Book III.

Re-translation of easy sentences. Grammatical Questions will be introduced into the Latin Paper, and each Candidate will be expected to give satisfactory answers to these.

III. *Mathematics.*

The Ordinary Rules of Arithmetic.

Vulgar and Decimal Fractions.

Addition, Subtraction, Multiplication, and Division, of Algebraical Quantities.

Simple Equations.

The First Two Books of Euclid.

IV. (a) *Greek.*

Xenophon; Anabasis, Books I. and II.

Grammatical Questions.

(b) *French.*

Molière; L'Avare.

Translation from English into French.

Grammatical Questions.

(c) *German.*

Fouqué; Undine.

Translation from English into German.

Grammatical Questions.

(d) *Natural Philosophy.*

Mechanics.

Hydrostatics and Pneumatics.

The Books recommended for study in this subject are Smith's "Statics," and Smith's "Hydrostatics," or Newth's "Natural Philosophy."]

* [NOTE.—The Examiners direct the attention of Candidates and of their Teachers to the large proportion of failures in the English Examination. They recommend the study of one of the following Grammars—Angus's, Adams's, William Smith's, Mason's and, in addition, French's English Past and Present.]

The fee for the Examination is One Guinea; and this must be paid at least *One Week* before the day of Examination. If a Candidate fail to pass the Examination, the fee will not be returned to him, but he will be admissible to either, or to both, of the two next following Examinations without payment of an additional fee, upon giving at least *One Week's* notice.

Certificates in Arts granted by any of the Bodies whose Certificate is

recognized by the Medical Council, will be accepted from Candidates who present themselves at the Professional Examination at the Hall, as equivalent to their having passed the above Examination.

National Dental Hospital and College.

HOSPITAL STAFF.

Consulting Physicians.—F. W. PAVY, Esq., M.D., F.R.S.; B. W. RICHARDSON, Esq., M.A., M.D., F.R.S.

Consulting Surgeons.—Professor ERICHSEN, F.R.S.; SPENCER WELLS, Esq., F.R.C.S.

Consulting Dental Surgeon.—J. MERRYWEATHER, Esq., M.R.C.S.

Dental Surgeons.

Monday.—Mr. JAMES STOCKEN, L.D.S.

Tuesday.—Mr. OAKLEY COLES, L.D.S.

Wednesday.—Mr. G. WILLIAMS, L.D.S.

Thursday.—Mr. A. F. CANTON, L.D.S.

Friday.—Mr. H. T. K. KEMPTON, L.D.S.

Saturday.—Mr. HARRY ROSE, L.D.S.

Assistant Dental Surgeons.

Mr. F. HENRI WEISS, L.D.S.

Mr.

Mr.

Mr. W. TAYLOR SMITH, L.D.S.

Mr. THOMAS GADDES, L.D.S.

Mr. L. STEVENS, L.D.S.

Lecturers.

Dental Anatomy and Physiology.—Mr. THOMAS GADDES, L.D.S., R.C.S.

Dental Surgery and Pathology.—Mr. OAKLEY COLES, L.D.S., R.C.S.

Dental Mechanics.—Mr. G. WILLIAMS, L.D.S., R.C.S.

Dental Metallurgy.—

Supplemental Lecturers.

Dental Materia Medica.—Mr. JAMES STOCKEN, L.D.S., R.C.S.

Elements of Histology.—Mr. THOMAS GADDES, L.D.S., R.C.S.

Demonstrator of Dental Mechanics.—Mr. HARRY ROSE, L.D.S., R.C.S.

Deformities of the Mouth.—Mr. OAKLEY COLES, L.D.S., R.C.S.

Arts and Literature.—Rev. H. R. BELCHER, M.A.

The Hospital is open for the reception of patients every weekday from 9 o'clock till 11 o'clock, a.m.

DRESSERSHIPS IN THE EXTRACTION ROOM.

These appointments are held for three months by six senior and six junior Students of the Hospital. The respective dressers for each day are required to be in attendance from 9 o'clock till the conclusion of the practice; and they will be under the direction of the Dental Surgeons for the day.

CLINICAL DEMONSTRATIONS.

Clinical Demonstrations will be given from time to time by the Medical Officers on cases of particular interest; also upon the Preparing and Filling of cavities, and other operations upon the teeth and contiguous tissues.

RULES AND REGULATIONS TO BE OBSERVED BY STUDENTS AT THE HOSPITAL.

I. Students admitted to the practice of this Hospital must enter

for the period of Two Years, and with the understanding that it is their intention to obtain the Dental Diploma of the Royal College of Surgeons. Exceptions to this rule can only be made under special or particular circumstances, and with the consent of the Medical Committee.

- II. Students are required to attend the Hospital daily (except Sundays), at 9 a.m., and must sign their names and the time of their arrival in the Attendance Book. No student shall be entitled to receive his Certificate of Attendance, unless he has attended not less than two-thirds of the time for which he had entered.
- III. No Student shall be allowed to undertake any operation during the first two months of his Hospital practice, except by special permission of the Dental Officer in Attendance.
- IV. Students must provide the necessary instruments for stopping teeth; and all instruments and appliances the property of the Hospital shall, after being used by a Student, be returned by him, cleansed, to their proper places.
- V. No Student shall be allowed to receive fee or remuneration from any patient attending the Hospital; and no mechanical work in the form of artificial teeth shall be supplied to a patient by a Student of the Hospital.
- VI. The authority of the Medical Officers of the Hospital must be always respected by the Students; and in case of unseemly conduct, it will be the duty of the Medical Officer to report the same to the Committee, who shall have the power to deal as they may think fit with such cases.

LECTURES.

WINTER SESSION, 1877—78.

DENTAL ANATOMY AND PHYSIOLOGY,
BY MR. THOMAS GADDES, L.D.S., R.C.S.

On Mondays at 8 p.m. during October, November, and December.

The following is the order in which the subjects will be treated:—

THE SYNTHETIC STUDY OF ODONTOLOGY.

The differentiation of tissues for dental purposes. The factors in the process of evolution. The specialised tissues produced in successive generations, as Bone; Cementum; Osteo-dentine; Vaso-dentine; Plici-dentine; Hard, or True-dentine; Enamel; and their morphological relation.

The structure of the "typical" hard tooth-tissues: Their structural modifications and homologous relations.

General distribution and form of teeth, with peculiar modifications as found in Fish, Reptiles, and various orders of Mammals.

The development of teeth as seen in Fish, Reptiles, and Mammals. Origin, structure, and metamorphosis of the several formative organs or pulps.

The attachment of teeth by Ankylosis, Membrane, Ligament, and Gomphosis.

The development of the jaws of man—of the antrum, alveoli, &c.

Relation of teeth to jaws in man compared with other primates.

These Lectures will be illustrated by Diagrams, Preparations, and Microscopic Specimens.

DENTAL METALLURGY,

BY

On Thursdays, at 8 p.m. during October, November, and December.

These Lectures will be devoted particularly to the consideration of those metals which are used in Dental practice as metals proper, and as alloys:—

The general character of the metallic elements, and their relations to the non-metallic elements: The chemical properties of the noble metals and the base metals: The analyses of alloys and compounds: The examinations for the metals under consideration.

SUPPLEMENTAL LECTURES.

THE ELEMENTS OF DENTAL MATERIA MEDICA AND THERAPEUTICS,

BY MR. JAMES STOCKEN, L.D.S., R.C.S.

On Wednesdays at 8 p.m., during January, February, and March.

(Free to Students of the College.)

The course will be devoted to a consideration of the various drugs and chemicals used to alleviate or cure diseases incidental to the teeth. The course will be illustrated by specimens and preparations, and the Students will be instructed in their names, source, characters, properties, preparation, and tests, and also in their physiological and therapeutic action.

The first part of the course will be devoted to a brief consideration of remedies in the following order:—

Psychical or Mental Remedies. Physical but Imponderable Remedies. Hygienic Remedies. Mechanical and Surgical Remedies. Pharmacological Remedies.

GENERAL PHARMACOLOGY.

Modes of Ascertaining the Effects of Medicine. Active Forces of Medicine. Changes Effected in Medicine by the Organism. Physiological Effects of Medicine. Therapeutical Effects of Medicine. Parts to which Medicines are Applied. Classification of Medicine.

SPECIAL PHARMACOLOGY.

1. Inorganic. 2. Organic.

DEMONSTRATIONS ON DENTAL MECHANICS, BY MR. HARRY ROSE, L.D.S., R.C.S.

On Mondays at 8 p.m., during January, February, and March.

(Free to Students of the College.)

This Course will consist, as far as possible, of Practical Demonstrations on—

The Preparation of the Mouth for Artificial Teeth.

On the Manipulation of the various Compositions, &c., for Impression Taking.

On taking Impressions of the Mouth, and obtaining a correct Bite or Articulation.

On Vulcanite work.

Plate work—Mounting Springs, Swivels, &c.

Pivoted teeth.

Mould-making in Plaster and Metal.

Continuous Gum work.

DEFORMITIES OF THE MOUTH AND THEIR TREATMENT, BY MR. OAKLEY COLES, L.D.S., R.C.S.

On Fridays at 8 p.m., during February and March.

(Free to Students of the College.)

In these lectures the following subjects will be considered:—

CONGENITAL DEFORMITIES.

Origin of Cleft Palate; theory of its Transmission from Parent to Offspring. Anatomy and Physiology of Cleft Palate. Troubles arising from Cleft Palate. Their Surgical and Mechanical Treatment.

ACQUIRED DEFORMITIES.

Resulting from Syphilis. Mechanical Injury. Gunshot Wounds, &c. Their Surgical and Mechanical Treatment.

The course will be illustrated by diagrams, models and preparations. The construction of mechanical appliances will receive special consideration.

LECTURES.

SUMMER SESSION 1878.

DENTAL MECHANICS,

BY MR. GEORGE WILLIAMS, L.D.S., R.C.S.

On Thursdays at 8 p.m. during May, June, and July.

The subject is treated in the following order:—

Preparation of the Mouth. The Materials used for Impressions and their Uses.

On the various methods of applying Heat in the Dental Laboratory.

Casting in Plaster and Metals.

Precious Metals used in Mechanical Dentistry.

Their Application.

On the various forms of Porcelain used in Mechanical Dentistry, and their Application.

Non-Metallic Bases and their Application.

Malformations Mechanically Considered.

Conclusion.

DENTAL SURGERY AND PATHOLOGY,

BY MR. OAKLEY COLES, L.D.S., R.C.S.

On Tuesdays and Fridays at 8 p.m., during May and June.

The subjects of this course will be considered in the following order:—

Inflammation: Its Symptoms, Initial Changes, Causes, Terminations, Principles of Treatment.

Special forms of Inflammation: affecting the Mouth and Gums: Catarrhal, Herpetic, Mercurial, Croupous, Phlegmonous, Suppurative, Acute Adœmatous.

Inflammation of Special Tissues: Pulp, Periosteum, Mucous Membrane of Antrum.

Atrophies: Pulp, Periosteum, Alveolus, Gums, Den-

tine, Cementum. Spontaneous abrasions. Erosion. The Atrophy of Pregnancy.

Caries and Necrosis of Teeth and Jaws. Symptoms, Causes, and Treatment of.

Hypertrophies: Pulp — Polypus, Sensitive Sprouting. Gum—Transparent Hypertrophy of, Congenital Hypertrophy of. Periosteum—Polypus of. Jaws and Alveolus. Tooth Structures—Exostosis, Inostosis. Odontomes.

NEW FORMATIONS.—Tumours, Odontomes, varieties and classification of.

ACCIDENTS AND DISEASES OF JAWS AND ADJACENT STRUCTURES.—Foreign Bodies in Antrum, Abscess of Antrum, &c. Dislocation, Fracture and Closure of Jaws. Surgery of Lips, Jaws and Palate. Syphilitic Affections in their influence upon the teeth and surrounding Tissues. Neuralgia. Anæsthetics.

Irregularities of Teeth as regards Form, Period of Eruption, and Position.

The lectures will be illustrated by diagrams, models and microscopic preparations.

SUPPLEMENTAL LECTURES.

ELEMENTS OF HISTOLOGY, BY MR. THOMAS GADDES, L.D.S., R.C.S.

On Mondays and Wednesdays, at 8 p.m., during June and July.

(Free to Students of the College).

The object of this course is to give an account of the minute structure and development of the simple tissues of the body, and to prepare the student for the course on Dental Anatomy and Physiology.

The subjects comprised in the course are fully illustrated by diagrams, drawings, and microscopic specimens, and are treated in the following order:—

Introduction.—Life and its characteristics.

Death.—Local, physiological, and general or systemic death.

Cells.—Structure, cell wall, function, multiplication.

Blood.—Fluid, cells, granules.

Epithelium.—Squamous, columnar, spheroidal, ciliated.

Connective tissue.—Areolar, white-fibrous, yellow-elastic.

Cartilage.—Temporary, permanent.

Bone.—Spongy, compact; formation and absorption of Haversian systems.

Muscle.—Striped and unstriped.

Blood vessels.

Mucous membrane.

Skin and its appendages.

Glands.—Salivary, gastric, mucous.

Secretion.—By glands, by membrane.

Absorption.

**ARTS AND LITERATURE CLASS,
CONDUCTED BY THE REV H. R. BELCHER, M.A.**

Assistant Master King's College School.

The arrangements for this class will vary according to the requirements of the Students entering.

**GENERAL FEE FOR SPECIAL LECTURES REQUIRED BY THE
CURRICULUM.**

Two Courses on Dental Anatomy and Physiology ..	} £12 12 0
" " Dental Surgery and Pathology ..	
" " Dental Mechanics	
One Course on Dental Metallurgy	

FEES TO SINGLE COURSES.

	One Course.	Two Courses.
Dental Anatomy and Physiology ..	£2 12 6	£4 4 0
Dental Surgery and Pathology ..	2 12 6	4 4 0
Dental Mechanics	2 12 6	4 4 0
Dental Metallurgy	3 3 0	5 5 0

**FEES FOR LECTURES ON SUBJECTS ALLIED TO DENTAL SCIENCE,
NOT REQUIRED BY THE CURRICULUM.**

(These Lectures, with the exception of the Arts and Literature Class, are free to Students of the College who have entered for the Special Lectures).

Dental Materia Medica	£1 1 0
Elements of Histology	1 1 0
Demonstrations on Dental Mechanics ..	1 1 0
Deformities of the Mouth	2 2 0
Arts and Literature Class (Three Months) ..	3 3 0

FEE for the Two YEARS' HOSPITAL PRACTICE required by the Curriculum £12 12s.

TOTAL FEE for the Special Lectures and Hospital Practice required by the Curriculum **£25 4s.**

(See Advertisement.)

London School of Dental Surgery.

DENTAL OFFICERS, AND THE DAYS AND HOURS OF HOSPITAL ATTENDANCE.

Consulting Physician.—Sir THOMAS WATSON, Bart., M.D.
 Consulting Surgeon.—Mr. CHRISTOPHER HEATH, F.R.C.S.
 Consulting Dental Surgeons.—Mr. SAMUEL CARTWRIGHT, F.R.C.S.,
 and Mr. JOHN TOMES, F.R.S.

Dental Surgeons.

9 a.m. Monday.—Mr. FOX, M.R.C.S., L.D.S.
 „ Tuesday.—Mr. MEDWIN, M.D., M.R.C.S., L.D.S., &c.
 „ Wednesday.—Mr. GREGSON, M.R.C.S., L.D.S.
 „ Thursday.—Mr. COLEMAN, F.R.C.S., L.D.S., &c.
 „ Friday.—Mr. T. H. HARDING, L.D.S.
 „ Saturday.—Mr. HILL, L.D.S.

Assistant Dental Surgeons.

9 a.m. Monday.—Mr. MOON, M.R.C.S., L.D.S.
 „ Tuesday.—Mr. ASHLEY GIBBINGS, M.R.C.S., L.D.S.
 „ Wednesday.—Mr. D. HEPBURN, L.D.S.
 „ Thursday.—Mr.
 „ Friday.—Mr. BARTLETT, L.D.S.
 „ Saturday.—Mr. HUTCHINSON, M.R.C.S., L.D.S.

Administrators of Chloroform.

9.30 a.m. Tuesday and Wednesday.—Mr. CLOVER, F.R.C.S.
 „ Friday and Saturday.—Mr. BRAINE, F.R.C.S.
 „ Monday.—Mr. BAILEY, M.R.C.S.
 Dental House Surgeon, *pro tem.*—Mr. JOHN ACKERY.

DEMONSTRATIONS.

The Medical Officers will make every effort to give Demonstrations to the junior pupils, on cases selected from time to time, every morning during the Lecture Session; and at the end of the Course those gentlemen who have attended the Demonstrations to the satisfaction of the Medical Officers will be permitted to perform operations at the Hospital under the supervision of the Medical Officers and the House Surgeon. Those of the senior Students who can spare the time will also be very welcome to attend; but it is requested that the juniors whose names are on the list of the surgeons of the day, will be allowed the best places for seeing the Demonstrations.

DRESSERSHIPS FOR CASES OF EXTRACTION.

These appointments are held for two months, and consist of six Senior Dresserships for extractions under anæsthetics, and eighteen Junior Dresserships for ordinary extractions.

The Senior Dressers will be selected from those pupils *only* who have entered fully both to the Practice and Lectures of this Hospital, and also to the Course required by the College of Surgeons for the License in Dental Surgery at one of the General Hospitals.

LECTURES.

DENTAL SURGERY AND PATHOLOGY.

By MR. SAMUEL HAMILTON CARTWRIGHT, M.B.C.S., L.D.S.

Inflammation.—Its Nature, Pathology, and Symptoms. Its important bearing in relation to Dental Surgery. Various examples of its action in connection therewith. The phenomena of reflex pain and action explained.

The First Dentition.—Local and Constitutional Maladies occurring synchronously with that period. The effects of Struma, Syphilis, &c., upon Dentition. Diseases connected with the temporary Teeth. Their management considered in relation to the coming permanent Dentition.

The Second Dentition.—The chief forms of Temporary and Permanent Irregularity. Their Causes and Treatment.

Caries and Special Diseases of the Teeth and Tissues connected therewith.—Its Pathology in connection with various theories on the Development of Tissues. The Vital, Chemical, and Chemicovital explanations of Decay. Its Treatment, constitutional and local. The operation of Filling considered under all its different relations. Diseases of the Pulp and the surrounding Tissues of the Teeth, and their Treatment. Effects of Mercury, Rheumatism, Syphilis, &c., on the soft and hard structures connected with the Teeth. Necrosis. Exostosis. Absorption. Denudation. Salivary Calculus. Abnormal conditions of the Mucous Membrane of the Mouth. Hypertrophy, Epulis, etc. Diseases of the Antrum. Dentigerous Cysts. Odontomes. Extraction of Teeth. Replantation.

Oral Surgery.—Tumours of the Maxillæ generally considered. Dislocation and Fractures of the Jaw. Diseases connected with the Salivary Ducts. Necrosis and Caries of Bone. Hare-lip. Perforations of Hard Palate, Cleft Palate. Neuralgia, &c. Therapeutic action of drugs used in Dental Surgery.

These Lectures will be delivered on the Mornings of Tuesday and Friday, at Eight o'clock, during the months of May and June. Recent Specimens, Preparations, Models, Drawings, &c., will be used to illustrate the Lectures.

DENTAL ANATOMY AND PHYSIOLOGY.

(*Human and Comparative.*)

By MR. C. S. TOMES, M.A., M.B.C.S., L.D.S.

General Scope of Odontology.—General Characters of Teeth, as to composition, form, position, &c.

The Dental Tissues.—Enamel. Distribution of, peculiar modification of, &c. Dentine, structure, &c., relation of to Bone, Vaso-dentine, and Osteo-dentine. Cementum. Structure, dis-

tribution, &c. Dental Pulp, structure, modification in advanced age, &c.

The Development of Teeth.—General Account of, as seen in Fish, Reptiles, and Mammals. Special modifications in particular groups. Relation of modern views to those held by Goodsir, &c.

The Development of the Jaws.—Their bearing upon Irregularities of the Teeth.

The Attachment of the Teeth.—By Membrane, by Anchylosis, by Implantation in Sockets. The relations existing between these three methods.

The Teeth of Man.

Anatomy of Chief Associated Parts.

An outline (so far as time may allow) of the Dentition of other Vertebrates.

Causes operating to modify an animal's dentition :—(1) Inheritance ; (2) Armament for sexual warfare ; (3) Provision for capture and comminution of food.

Fish.—Examples of typical dentitions.

Reptiles.— Ditto.

Mammals.— Ditto.

Examples of extreme modifications for particular purposes. Character of Marsupial Dentition ; of Carnivorous, Insectivorous, Rodent, and Herbivorous Dentitions.

These Lectures will be delivered on the Mornings of Wednesday and Saturday, at Eight o'clock, during the months of May and June. This course will be illustrated by Preparations, Diagrams and Microscopic Examinations.

MECHANICAL DENTISTRY.

By MR. J. S. TURNER, M.R.C.S., L.D.S.

Comprising the Preparation of the Mouth for Artificial Teeth. Impression-taking in Wax, Composition, and Plaster of Paris. Mould-making in Plaster and Metal. Bites or Articulations. The Metals used in Dentistry. Gold-melting, Refining, and Alloying. Plate-making. Artificial Teeth, their qualities and arrangement. How to work Tube and Pin Teeth. Vulcanite, its nature and preparation. Making Vulcanite Cases. Making Pivots. Mounting Spiral Springs. Regulation Plates. Dr. N. Kingsley's Method of making Soft Rubber Obturators.

This Course is illustrated by diagrams and practical demonstrations.

These Lectures will be delivered on the Evenings of Wednesday, at Seven o'clock, during the months of October, November, and December.

METALLURGY IN ITS APPLICATION TO DENTAL PURPOSES.

By MR. G. H. MAKINS, M.R.C.S., F.C.S.

The Lectures delivered in this Course, while embracing, as far as possible, the subject generally, will be devoted more particularly to those metals useful in Dental practice.

The general properties of the Metallic Bodies will first be examined, and also their Clinical relations to the non-Metallic. Some consideration will then be given to heating appliances, and to the nature and uses of Gaseous and Solid Fuels. After these the metals will be separately treated of, commencing with the noble, and ending with the base metals.

Throughout the Course, such Chemical and Mechanical points as may bear upon the Student's pursuits will be treated of, and methods of analysis detailed.

These Lectures will be delivered on the Mornings of Tuesday and Friday, at Twelve o'clock, during the months of October and November.

GENERAL FEE FOR THE SPECIAL LECTURES AND HOSPITAL
PRACTICE REQUIRED BY THE CURRICULUM.

	£.	s.	d.
Two Courses on Dental Anatomy	15	15	0
" Dental Surgery			
" Mechanical Dentistry			
One Course of Metallurgy			

FEES TO SINGLE COURSES.

Dental Anatomy and Physiology, one Course ..	3	3	0
" two Courses ..	5	5	0
Dental Surgery, one Course	3	3	0
" two Courses ..	5	5	0
Dental Mechanics, one Course	3	3	0
" two Courses ..	5	5	0
Metallurgy, one Course	3	3	0
" two Courses ..	5	5	0
Fee for the Two Years' Practice of the Hospital required by the Curriculum	15	15	0

Total Fee for the Special Lectures and Hospital Practice required by the Curriculum, £31 10s.

Students who perform Operations for Filling Teeth must provide their own Instruments for the same.

Further particulars may be obtained on application to the Dean,
Mr. T. FRANCIS KEN UNDERWOOD.

RULES AND REGULATIONS

To be observed by Students of the Hospital.

1. Students entering the practice of this Hospital shall (unless exempted for special reasons) do so upon the understanding that it is their intention to obtain the Dental Diploma of the Royal College of Surgeons of England. Before commencing their course of Studies they must sign their names as willing to conform to this rule and the following regulations :—

2. Students must attend the Hospital daily (except Sunday) at 9 o'clock A.M. An Attendance-book is provided, in which the Junior Pupils must sign their names during the Course of Demonstrations.

3. No Student shall undertake any operation until he has attended a Course of Demonstrations to the satisfaction of the Medical Officers. When permitted to undertake operations for filling teeth, he must provide the instruments requisite for the same. For all cases of gold filling, permission must be obtained of a Medical Officer. A certificate of having performed 150 fillings to the satisfaction of the Medical Officers or the House Surgeon in each of his two years of attendance will be required from a Pupil before his Schedule can be signed.

4. No Student shall, under any circumstances, receive fee or remuneration from any Patient attending, or to whom he may become known whilst attending the Hospital, and no mechanical work in the form of artificial teeth shall be supplied to a Patient by a Student of the Hospital.

5. Students must be punctual in their appointments with Patients; when otherwise, cases previously under their care will be entrusted to other Students by the Medical Officers.

6. No Student shall make use of the same Operating Chair for Patients consecutively whilst other Students are unoccupied for want of the same.

7. All instruments and appliances the property of the Hospital shall, after having been used by a Student, be returned cleansed to their proper places.

8. Students must consider themselves strictly under the control of the Medical Officers of the Hospital. All unnecessary conversation must be avoided, and quietude and gentlemanly bearing before the Patients observed.

9. Any exemption from fully carrying out Rules 1, 2, and 3, can only be obtained from the Medical Committee upon grounds that may appear to them good and proper for granting such exemption.

N.B.—Students will be required to attend the Lectures and Practice during the Two Years, consecutively, except with the

special written permission of the Dean. By a resolution of the Council of the College of Surgeons, all Students entering on and after October 1st, 1877, will be required to complete the full Two Years of Hospital Practice.

(See Advertisement.)

Liverpool Dental Hospital.

HOSPITAL STAFF.

Consulting Physician.—JOHN MACNAUGHT, M.D., F.R.C.P.

Consulting Surgeon.—WILLIAM MITCHELL BANKS, M.D., F.R.C.S.

Consulting Dental Surgeons.—W. J. NEWMAN, M.O.S., Gt. Brit., &c.; R. E. STEWART, L.D.S., R.C.S.

Dental Surgeons.—JAMES B. LLOYD; WILLIAM T. BRYAN; E. J. M. PHILLIPS, M.R.C.S., L.D.S.; THOMAS F. AUSTIN; EVAN A. MORGAN, L.K.Q.C.P., M.R.C.S.; JAMES E. ROSE, M.O.S. Gt. Brit., &c.

Assistant Dental Officers.—CHARLES T. STEWART, and J. G. ROBERTS.

This Hospital is a School of Practical Dental Surgery, open to all students of Dentistry, under such regulations as shall be determined by the Committee of Management.

Hospital Practice.—Fee £10 10s. per annum. Pupils and Apprentices of the Honorary Dental Surgeons shall have the privilege of attending the practice of the Hospital free of expense.

(See Advertisement.)

Plymouth Dental Dispensary.

Physician.—C. ALBERT HINGSTON, Esq., M.D., Lond.

Surgeons.—CHRISTOPHER BULTEEL, Esq., F.R.C.S.; CONNELL WHIMPLE, Esq., M.R.C.S.

Consulting Dentists.—STRATTON J. COLES, Esq.; F. A. JEWERS, Esq.

Dentists.—W. V. MOORE, Esq., L.D.S., R.C.S.; C. SPENCE BATE, Esq., F.R.S., L.D.S., R.C.S.; FRANCIS H. BALKWILL, Esq., L.D.S., R.C.S.

The Dentists attend, at 9 o'clock, on Mondays, Wednesdays, Thursdays, and Saturdays, to stop, regulate, or extract teeth; or to adopt such a course as the necessity of the case may suggest.

A Course of Lectures will be delivered during the year.

On "Dental Physiology,"

By C. SPENCE BATE, F.R.S., L.D.S., R.C.S.

On "Dental Anatomy,"

By F. H. BALKWILL, L.D.S., R.C.S.

On "Dental Mechanics,"

By W. V. MOORE, L.D.S., R.C.S.

Fee to Lectures, one Course, £7 7s.; double Course, £12 12s.

Fee to Dental Practice at Dispensary, £5 5s. per annum.

Fee to entire Dental Curriculum (required for Diploma), £23 2s.

Pupils of any of the Dental Surgeons of the Plymouth Dental Dispensary, or other Dentists holding a Diploma of the College of Surgeons, or a Member of the Odontological Society, may attend

the Dispensary on the day of such practitioner as may agree to accept such pupil or pupils, on the payment of £1 1s. per annum to the Institution.

The Practice and Lectures are recognised as qualifying for the Diploma in Dental Surgery of the Royal College of Surgeons.

Charing-Cross School of Medicine.

Dental Surgeon.—JOHN FAIRBANK, M.R.C.S.

The Charing-Cross Hospital Medical School is one of the recognised Schools of Dental Surgery, and is in close proximity to the Dental Hospital.

The Course of Lectures on Dental Surgery includes the Structure, Development, and Eruption of the Temporary and Permanent Teeth; the Method of treating and avoiding Irregularities; Diseases of the Teeth and their Treatment; also the Mechanical Treatment of Cleft Palate, and other Imperfections of the Jaws.

The Lectures are illustrated by Models and Diagrams.

Practical Instruction in Dental Surgery is given three times a week by Mr. Fairbank at the Hospital.

Composition Fee for Dental Surgery, £42 2s.

Guy's Hospital Medical School.

Dental Surgeon.—S. J. A. SALTER, M.B., F.R.S.

Assistant-Dental Surgeon.—HENRY MOON, M.R.C.S., L.D.S.

Mr. Salter visits the Hospital every Thursday from Twelve till One o'clock and gives practical instruction in Operative Dental Surgery, including the Diseases of the Teeth and of the immediately contiguous structures when dependent upon or associated with Tooth-disease.

Cases of Alveolar Abscess, Antral Abscess, Odontomes, Denti-gerous Cysts, Necrosis, Tumours, &c., of the Gums, are constantly under treatment.

Especial attention is paid to the treatment of irregularities of the teeth both by operation and by mechanical means. Apparatus is supplied at the expense of the Hospital for such cases and examples as are constantly under care. In cases of jaw-disease and accident, where portions of bone and teeth are lost, supplemental jaws, palates and teeth are adapted. Congenital cleft-palates are also treated at the Hospital by mechanical apparatus. Practical instructions on the foregoing matters are given by Mr. Salter.

Mr. Moon delivers in the summer session a short course of

lectures introductory to the practice of Dental Surgery, and gives special instruction in this subject to the Dressers in the Surgery.

Fee for attendance on the Hospital Practice and Lectures required for the Dental Diploma of the College of Surgeons, 50 guineas; or in two annual instalments of 30 guineas and 20 guineas.

King's College.

Dental Surgeon.—S. HAMILTON CARTWRIGHT, M.R.C.S., L.D.S.

Students in Dental Surgery are divided into two Classes :—

- I. Those who, having attended the Course of Study required for qualifying as a Medical Practitioner, afterwards take up the Special Courses of Dentistry, at an additional cost of Thirty Guineas.

The Special Course of Dentistry includes Lectures on Dental Anatomy and Physiology, Dental Surgery, Mechanics, and Metallurgy, and two years of Dental Hospital practice.

- II. Those who only take up the Curriculum required by the College of Surgeons for their Dental Diploma. Such Students must attend two Courses of Anatomy; one of Physiology, Chemistry, Medicine, Surgery, Materia Medica, Practical Chemistry; and two Winter Sessions of Surgical Practice; also the Special Course of Dentistry.

The charge for these Students, including Matriculation Fees, is £95 1s. 6d. if paid in one sum on entrance; or £100 if paid by the following instalments, viz.: £60 on entrance, and £40 at the beginning of the Second Winter Session.

Professor Cartwright will give Clinical Lectures on alternate Tuesdays during the Winter Session at 10.30 a.m.

London Hospital and Medical College.

Dental Surgeon.—A. W. BARRETT, M.B., Lond., M.R.C.S.

Mr. Barrett gives practical instruction on Tuesdays at 9 a.m., which is open to all Students of the School and Hospital, and can be attended by gentlemen who are not pupils. Mr. Barrett will be always glad to receive applications from those desirous of holding the office of Dental Assistant. The attention of Dental Students is particularly directed to the fact that the Council of the College of Surgeons recognize the Dental Department of the London Hospital as a School at which may be obtained the Dental Practice necessary to qualify a Student for the Examination for the Dental Diploma. Dental Students may also obtain the General Medical Education (that is, apart from certain Special Lectures to be attended at Dental School) and the Dental Practice,

necessary for the Diploma, at the London Hospital School, on very advantageous terms.

ANATOMY AND PATHOLOGY OF THE TEETH, AND DENTAL SURGERY.

By A. W. BARRETT, M.B., Lond., M.R.C.S.

This Course will be delivered on days which will be duly announced.

Fees : Dental Students (General Hospital Practice and Lectures), £42 ; Perpetual Fee for Dental Practice, £10 10s.

Middlesex Hospital Medical College.

Consulting Dental Surgeon.—JOHN TOMES, F.R.S.

Dental Surgeon.—J. S. TURNER, M.R.C.S., L.D.S.

Pupils receive instruction on Diseases of the Teeth, and the Operations connected with them, daily at Nine o'clock.

Students who intend to become Licentiates in Dental Surgery of the Royal College of Surgeons are admitted to attend the requisite Courses of Lectures and Hospital Practice on payment of a Fee of Forty Guineas, either in one payment, or by instalments of Twenty-five Guineas on entrance, and Fifteen Guineas at the beginning of the second Winter Session.

INSTRUCTION IN DENTAL PRACTICE.

Fee for Occasional Students, Five Guineas.

(See Advertisement.)

St. Bartholomew's Hospital and College.

Dental Surgeon.—ALFRED COLEMAN, F.R.C.S., L.D.S., &c.

Mr. Coleman attends the Hospital on Fridays at 9 a.m.

DENTAL SURGERY AND PATHOLOGY.

By MR. COLEMAN.

Friday, at 10.30 a.m., during the months of October, November, and December.

The Lectures included in this course will be adapted to the requirements of Students generally, as well as of those qualifying themselves for the Dental Diploma of the Royal College of Surgeons.

The subjects treated of in this course will be the following :—

I. The First Dentition, Conditions Normal and Abnormal, Period of Eruption of the Temporary Teeth.

Diseases Peculiar to the Temporary Teeth—Treatment of same—Absorption of the Temporary Teeth—Conditions interfering with the same.

II. The Second Dentition—Irregularities in the Permanent

Teeth, in Form, Size, Number, and Position—Treatment of Irregularities in position.

Diseases of the Permanent Teeth—Caries, its Nature and Treatment—Operations for Plugging or Filling Teeth—Necrosis, Exostosis, &c.

- III. Diseases of other structures and organs dependent upon or connected with Diseased Teeth, such as alveolar abscess, necrosis of alveoli, alveolar hæmorrhage, tumours, ulcers, glandular diseases, fistulæ, closure of jaws by cicatrices.

The Lectures (free to all general Students of the Hospital) will be illustrated by Diagrams, as well as by pathological and microscopic preparations.

These Lectures are recognised by the Royal College of Surgeons as a course of Lectures on Dental Surgery required for obtaining the Dental Diploma of that Body.

Fee for General Subjects for Students of Dental Surgery: First Winter, £26 5s.; First Summer, £26 5s.; or a single payment of £52 10s.

Dental Surgery (free to all general Students of the Hospital)—One Course, £2 2s.; Unlimited. £3 3s.

St. George's Hospital Medical School.

Dental Surgeon.—THOMAS EDGELOW, L.R.C.P., M.R.C.S.

Mr. Edgelow attends at the Hospital on Tuesday and Saturday, at 9 a.m., and on Thursday, at 1 p.m.

A Course of Lectures on Dental Surgery will be given during the Summer Session. These Lectures will include the Development, the Anatomy, and the Diseases of the Teeth.

Gentlemen will be admitted to the Lectures and Hospital Practice required for the Diploma in Dental Surgery by one payment of £45. (*This sum does not include Practical Chemistry.*)

Attendance on the practice of the Dental Department of St. George's Hospital is recognised by the Royal College of Surgeons for the Dental Diploma.

(See Advertisement.)

St. Mary's Hospital Medical School.

Dental Surgeon.—HOWARD HAYWARD, M.R.C.S., L.D.S.

Mr. Hayward attends the Hospital on Wednesday and Saturday at 9.30 a.m., when practical instruction is given in Dental Operations.

A course of lectures on Dental Surgery is delivered by Mr. Hayward.

Fee for the Course, £2 2s.

Entrance Fee to the Hospital Practice and Lectures required for the Examination in Dental Surgery by the Royal College of Surgeons, £52 10s.

(See Advertisement.)

St. Thomas's Hospital Medical and Surgical College.

Dental Surgeon,—J. W. ELLIOTT, M.R.C.S., L.D.S.

Assistant-Dental Surgeon.—W. G. RANGER, M.R.C.S.

Instruction in Dental Surgery is given by Mr. Elliott and Mr. Ranger, on Tuesdays and Fridays, at 10 o'clock.

The Fee for attendance on the general subjects required of Students in Dental Surgery is, for the two years, £45, or by instalments, £40 for the first year, and £10 for the second year.

EXTRA CHARGES.

Students attending the Classes of Practical Chemistry and Practical Physiology are required to pay a fee of One Guinea and a half for each Class, as a contribution towards the cost of instruments supplied, and of materials used by them.

(See Advertisement.)

University College Hospital.

Dental Surgeon, G. A. IBBETSON, F.R.C.S., L.D.S.

Mr. Ibbetson, attends the Hospital on Wednesday mornings at 10 o'clock.

DENTAL SURGERY.

Lecturer, G. A. IBBETSON, Esq.

Monday and Thursday from 4 to 5 p.m., commencing on January 7th.

Under the head of Anatomy and Physiology, an account of the structure and mode of development of the dental tissues will be given, with the anatomical characters of each class of teeth.

Under the head of Irregularity or Malposition, the abnormal position which the teeth frequently assume will be treated of, and the means resorted to for their reduction explained.

Under the head of Pathology, the diseases of the dental tissues and their treatment will be considered.

The different operations on the teeth, and the method of restoring lost organs by artificial means will be explained.

The Course will consist of twelve lectures, and will be illustrated by drawings, models, microscopic, and other preparations.

Fee £2 2s.

(No Composite Fee for Dental Students is given.)

Westminster Hospital Medical School.

Dental Surgeon.—JOSEPH WALKER, M.D., L.D.S., &c.

Mr. Walker, attends at 9.15 a.m. on Wednesdays and Saturdays.

DENTAL SURGERY.

By J. WALKER, M.D., M.R.C.S., L.D.S.

Wednesdays, at 9.30 a.m. (in October, November, and December).

Fees: One Course, Two Guineas. Free to Students of the Hospital unless a Certificate be required.

This Course of Lectures will include the Development and Microscopic Characters of the Teeth—The Eruption of the temporary and permanent Teeth, with the incidental Diseases—The mode of treating and avoiding Irregularities of the permanent Teeth—Diseases of, and Operations on, the Teeth.

The Lectures will be illustrated by Models, Specimens, and Diagrams.

METALLURGY IN ITS APPLICATION TO DENTAL PURPOSES.

By AUGUST DUPRE, Ph. D., F.R.S., F.C.S.

Tuesdays, at 4 p.m. (in January, February, and March).

Fees: One Course, Three Guineas; Two Courses, Five Guineas.

This Course of Lectures will include the general properties of the Metals, the special characters of those used in Dental practice, heating appliances, modes of manipulation, and methods of analysis.

DENTAL ANATOMY AND PHYSIOLOGY.

By W. H. ALLCHIN, M.B., Lond., M.R.C.P.,

Wednesday, at 4 p.m.

Fees: One Course, Two Guineas; Two Courses, Three Guineas.

This Course will comprise the development, characters, and structure of the teeth and the development of the jaws in man, as compared with the same in animals.

DENTAL MECHANICS.

By _____, Dental Surgeon to the Hospital.

Hours not yet fixed.

Fees: One Course, Three Guineas; Two Courses, Five Guineas.

This Course will include all the mechanical work required in practical Dentistry, and will be illustrated by diagrams and practical demonstrations.

FEES FOR DENTAL STUDENTS.The Fees for the *general* Surgical Practice and Lectures required

for the Dental Diploma of the Royal College of Surgeons may be paid in one of two ways :—

In *one* payment on Entrance, Thirty-seven Guineas (£38 17s.).

Or in *two* payments of £27 10s. and £14 10s. to be made respectively at the commencement of each Academic year.

None of these payments entitle the students to *perpetual* attendance on any of the Classes.

Students who become general Dental Students, as above, may enter for the special practice and lectures at one of the Dental Hospitals, where there are great advantages for the study of Practical Dentistry ; or if a sufficient number of Students present themselves they may enter for the whole of their special lectures at the Westminster Hospital Medical School—in the latter case entering for the Practice only of a Dental Hospital.

The special fees for Dental Students at the Westminster Hospital would be :—For the Lectures, including Metallurgy, Dental Surgery and Pathology, and Dental Anatomy and Physiology, in one sum on entrance, £14 14s. This payment is perpetual.

The Courses required for the Dental License of the College of Surgeons are one course of Metallurgy, and two of each of the other three.

(See Advertisement.)

Royal College of Surgeons of England.

PROFESSIONAL EDUCATION FOR THE MEMBERSHIP OF THIS COLLEGE.

- I. Professional Studies prior to the date at which the Candidate shall have passed an Examination in General Knowledge in conformity with the Regulations in the preceding Section are not recognized.
- II. The following will be considered as the commencement of Professional Education :—
 1. Attendance on the Practice of a Hospital, or other Public Institution recognized by this College for that purpose.
 2. Instruction as the Pupil of a legally qualified Surgeon, holding the appointment of Surgeon to a Hospital, General Dispensary, or Union Workhouse, or where such opportunities of practical instructions are afforded as shall be satisfactory to the Council.
 3. Attendance on Lectures on Anatomy, Physiology, or Chemistry, by Lecturers recognized by this College.

The commencement of professional study, otherwise than by attendance on Lectures in recognized Medical Schools, or by attendance on the Practice of recognized Hospitals, will not be admitted until a Certificate thereof shall be furnished to the Secretary for registration at the College, by the Practitioner whose Pupil the Candidate shall have become, or by the Medical Superintendent of the Hospital or other Institution to the practice of which he shall have entered, and will, consequently, date only from the reception of such Certificate by the Secretary ; the Certificate

to be accompanied by proof of having passed the necessary Preliminary Examination in General Knowledge.

III. Candidates will be required to produce the following Certificates, viz. :—

1. Of being twenty-one years of age.
2. Of having been engaged, subsequently to the date of passing the Preliminary Examination, during four years, or during a period extending over not less than four Winter and four Summer Sessions, in the acquirement of professional knowledge.
3. Of having attended Lectures on Anatomy, during two Winter Sessions.
4. Of having performed Dissections during not less than two Winter Sessions.
5. Of having attended Lectures on General Anatomy and Physiology during one Winter Session.
6. Of having attended a Practical Course of General Anatomy and Physiology during another Winter or a Summer Session, consisting of not less than thirty meetings of the Class.

Note A.—By the Practical Course referred to in Clause 6, it is meant that the learners themselves shall individually, be engaged in the necessary experiments, manipulations, &c. ; but it is not hereby intended that the learners shall perform vivisections.

7. Of having attended Lectures on Surgery during one Winter Session.
8. Of having attended a Course of Practical Surgery during a period occupying not less than six months prior or subsequent to the Course required by the preceding Clause 7.

Note B.—The Course of Practical Surgery referred to in Clause 8 is intended to embrace instruction in which each Pupil shall be exercised in practical details, such as in

The application of Anatomical facts to Surgery, on the living person, or on the dead body.

The methods of proceeding and the manipulations necessary in order to detect the effects of diseases and accidents, on the living person, or on the dead body.

The performance, where practicable, of the operations of Surgery on the dead body.

The use of Surgical Apparatus.

The examination of diseased structures, as illustrated in the contents of a museum of Morbid Anatomy and otherwise.

9. Of having attended one Course of Lectures on each of the following subjects, viz. :—

Chemistry.

Materia Medica.

Medicine.

Forensic Medicine.

Midwifery (with practical instruction, and a certificate of having personally conducted not less than ten labours).

Pathological Anatomy during not less than three months.

Note C.—The Course of Lectures on Chemistry included in Clause 9

will not be required in the case of a Candidate who shall have passed a satisfactory Examination in this subject in his Preliminary Examination.

10. Of having studied Practical Pharmacy during three months.
11. Of having attended a three months' Course of Practical Chemistry with Manipulations, in its application to Medical Study.
12. Of Instruction and Proficiency in the practice of Vaccination.

Note D.—In the case of Candidates who commenced their Professional Education on or after the 1st of October, 1868, the Certificate of Instruction in Vaccination will only be received from recognized Vaccine Stations, or from recognized Vaccine Departments in Medical Schools or Hospitals, or other Public Institutions, where the appointed Teacher of Vaccination is not liable to frequent change, and where simple means for study are provided by not less than such a number of cases (eight or ten on an average weekly) as may be found, after due inquiry, to be sufficient for this purpose at each place.

Note E.—The Certificates of attendance on the several Courses of Lectures must include evidence that the Student has attended the Practical Instructions and Examinations of his Teacher in each Course.

13. Of having attended, at a recognized Hospital or Hospitals, the Practice of Surgery, during three Winter and two Summer Sessions.

* * The Winter Session comprises a period of six months, and, in England, commences on the 1st of October and terminates on the 31st of March.

The Summer Session comprises a period of three months, and in England, commences on the 1st of May and terminates on the 31st of July.

14. Of having been individually engaged, at least twice in each week, in the observation and examination of Patients at a recognized Hospital or Hospitals, under the direction of a recognized Teacher, during not less than three months.

Note F.—It is intended that the Candidate should receive the instruction required by Clause 14 at an early period of his attendance at the Hospital.

15. Of having, subsequently to the first Winter Session of attendance on Surgical Hospital Practice, attended, at a recognized Hospital or Hospitals, Clinical Lectures on Surgery, during two Winter and two Summer Sessions.
16. Of having been a Dresser at a recognized Hospital, or of having subsequently to the completion of one year's professional education, taken charge of Patients under the superintendence of a Surgeon during not less than six months, at a Hospital, General Dispensary, or Parochial or Union Infirmary recognized for this purpose, or in such other similar manner as, in the opinion of the Council, shall afford sufficient opportunity for the acquirement of Practical Surgery.
17. Of having attended during the whole period of attendance on Surgical Hospital Practice (see Clause 13) demonstrations in the Post-Mortem Rooms of a recognized Hospital.
18. Of having attended, at a recognized Hospital or Hospitals, the Practice of Medicine, and Clinical Lectures on Medicine, during one Winter and one Summer Session.

Notice.—Clauses 6, 8, 11, 14, and 17, and Notes A, B, C, E, and F, together with the Courses of Lectures on Forensic Medicine and Pathological Anatomy mentioned in Clause 9, are applicable to Candidates who commenced their Professional Education on or after the 1st of October, 1870.

N.B.—Blank Forms of the required Certificates may be obtained on application to the Secretary, and all necessary Certificates will be retained at the College.

- I. Certificates will not be received on more than one branch of Science from one and the same Lecturer; but Anatomy and Dissections will be considered as one branch of Science.
- II. Certificates will not be recognized from any Hospital in the United Kingdom unless the Surgeons thereto be members of one of the legally constituted Colleges of Surgeons in the United Kingdom; nor from any School of Anatomy and Physiology or Midwifery, unless the Teachers in such School be members of some legally constituted College of Physicians or Surgeons in the United Kingdom; nor from any School of Surgery, unless the Teachers in such School be members of one of the legally constituted Colleges of Surgeons in the United Kingdom.
- III. No Metropolitan Hospital will be recognized by this College which contains less than 150, and no Provincial or Colonial Hospital which contains less than 100 Patients.
- IV. The recognition of Colonial Hospitals and Schools is governed by the same regulations with respect to number of Patients and to Courses of Lectures, as apply to the recognition of Provincial Hospitals and Schools in England.
- V. Certificates of Attendance upon the practice of a recognized Provincial or Colonial Hospital unconnected with, or not in convenient proximity to, a recognized Medical School, will not be received for more than one Winter and one Summer Session of the Hospital, Attendance required by the Regulations of this College; and in such cases Clinical Lectures will not be necessary, but a Certificate of having acted as Dresser for a period of at least six months will be required.
- VI. Certificates will not be received from Candidates who have studied in London, unless they shall have registered at the College their cards of admission to attendance on Lectures and Hospital Practice within fifteen days from the commencement of the Session; nor from Candidates who have studied in the Provincial Schools in England, unless their names shall be duly returned from their respective Schools.

N.B.—At their first registration in October, Candidates will be required to produce a Certificate of having passed one or other of the Preliminary Examinations in General Knowledge recognized by this College.

- VII. Those Candidates who shall have pursued the whole of their studies in Scotland or Ireland will be admitted to examination upon the production of the several Certificates required respectively by the College of Surgeons of Edinburgh, the Faculty of Physicians and Surgeons of Glasgow, and the

College of Surgeons in Ireland from Candidates for their Diploma, together with a Certificate of instruction and proficiency in the practice of Vaccination, and satisfactory evidence of having been occupied, subsequently to the date of passing the Preliminary Examination, at least four years, or during a period extending over four Winter and four Summer Sessions, in the acquirement of professional knowledge; and in the case of Candidates who shall have pursued the whole of their studies at recognized Foreign or Colonial Universities, upon the production of the several Certificates required for their Degree by the Authorities of such Universities, together with a Certificate of instruction and proficiency in the practice of Vaccination, and satisfactory evidence of having been occupied, subsequently to the date of passing the Preliminary Examination, at least four years, or during a period extending over four Winter and four Summer Sessions, in the acquirement of professional knowledge.

VIII. Members or Licentiates of any legally constituted College of Surgeons in the United Kingdom, and Graduates in Surgery of any University recognized for this purpose by this College, will be admitted to examination on producing their Diploma, Licence, or Degree, together with the proof of being twenty-one years of age, a Certificate of instruction and proficiency in the practice of Vaccination, and satisfactory evidence of having been occupied, subsequently to the date of passing the Preliminary Examination, at least four years, or during a period extending over four Winter and four Summer Sessions, in the acquirement of professional knowledge.

IX. Graduates in Medicine of any legally constituted College or University recognized for this purpose by this College, will be admitted to examination on adducing, together with their Diploma or Degree, proof of being twenty-one years of age, a Certificate of instruction and proficiency in the practice of Vaccination, and satisfactory evidence of having been occupied subsequently to the date of passing the Preliminary Examination, at least four years, or during a period extending over four Winter and four Summer Sessions, in the acquirement of professional knowledge.

PROFESSIONAL EXAMINATION.

This Examination is divided into two parts:—

1. The First or Primary Examination, on Anatomy and Physiology, is partly written and partly demonstrative on the recently dissected Subject, and on prepared parts of the Human body.
2. The Second or Pass Examination, on Surgical Anatomy and the Principles and Practice of Surgery and Medicine, is partly written, partly oral, and partly on the practical use of Surgical Apparatus, and the practical examination of Patients.

* * Candidates can claim exemption from examination in Medicine under the following conditions, viz:—

1. The production by the Candidate of a Degree, Diploma, or Licence

- in Medicine entitling him to register under the Medical Act of 1858, or a Degree, Diploma, or Licence in Medicine of a Colonial or Foreign University approved by the Council of the College.
- II. A declaration by the Candidate, prior to his admission to the Final Examination for Membership or Fellowship, that it is his intention to obtain either of the Medical Qualifications mentioned in the foregoing paragraph, in which case the Diploma of the College will not be issued to him until he shall produce either the said Medical Qualification or proof of having passed the several examinations entitling him to receive the same.
 8. The Primary Examinations are held in the months of January, April, May, July, and November, and the Pass Examinations generally in the ensuing week respectively.
 4. Candidates will not be admitted to the Primary Examination, until after the termination of the second Winter Session of their attendance at a recognized School or Schools; nor to the Pass, or Surgical Examination, until after the termination of the fourth year of their professional education.
 5. The fee of Five Guineas, paid prior to the Primary Examination, and allowed on the whole fee of Twenty-two Pounds* payable for the Diploma, is retained; and after any two consecutive failures at the Primary Examination, the Candidate is required to pay an *additional* fee of Five Guineas prior to being again admitted to that Examination, which *additional* fee is also retained.
 6. Five Guineas, part of the sum of Sixteen Pounds Fifteen Shillings, the balance of the whole fee due for the Diploma and paid prior to the Pass Examination, is retained; and after any two consecutive failures at the Pass Examination, the Candidate is required to pay an *additional* fee of Five Guineas prior to being again admitted to the said Pass Examination, which *additional* fee is also retained.
 7. A Candidate having entered his name for either the Primary or Pass Examination, who shall fail to attend the meeting of the Court for which he shall have received a card, will not be allowed to present himself for examination within the period of three months from the date at which he shall have so failed to attend.
 8. A Candidate referred on the Primary Examination is required, prior to his admission to re-examination, to produce a Certificate of the performance of dissections during not less than three months, subsequently to the date of his reference.
 9. A Candidate referred on the Pass Examination is required, prior to his admission to re-examination, to produce a Certificate of at least six months' further attendance on the Surgical Practice of a recognized Hospital, together with Lectures on Clinical Surgery subsequently to the date of his reference.

PROFESSIONAL EDUCATION FOR THE FELLOWSHIP OF THIS COLLEGE.

- I. Except in the cases and instances hereinafter provided for to the contrary, every Candidate for admission to the First or Anatomical and Physiological Examination for the Fellowship is required to produce the following Certificates, viz. :—

1. Of having passed the Preliminary Examination appointed by the Council, or such other Examination as the Council may from time to time determine to be equivalent thereto.
2. Of having studied Practical Pharmacy during three months.
3. Of having attended Lectures on Anatomy during two Winter Sessions at a recognized School or Schools.
4. Of having performed Dissections at a recognized School or Schools during three Winter Sessions.
5. Of having attended Lectures on General Anatomy and Physiology during one Winter Session at a recognized School.
6. Of having attended a Practical Course of General Anatomy and Physiology during another Winter or a Summer Session, consisting of not less than thirty meetings of the Class, at a recognized School.

Note A.—By the Practical Course referred to in Clause 6, it is meant that the learners themselves shall, individually, be engaged in the necessary experiments, manipulation, &c.; but it is not hereby intended that the learners shall perform vivisections.

7. Of having attended one Course of Lectures on Comparative Anatomy, one Course of Lectures on Chemistry, and a three months' Course of Practical Chemistry (with Manipulations), in its application to Medical Study, at a recognised School or Schools.

Note B.—The Course of Lectures on Chemistry included in Clause 7 will not be required in the case of a Candidate who shall have passed a satisfactory Examination in this subject in his Preliminary Examination.

Note C.—The Certificates of attendance on the several Courses of Lectures must include evidence that the Student has attended the Practical Instructions and Examinations of his Teacher in each Course.

II. Except in the cases and instances hereinafter provided for to the contrary, every Candidate, before his admission to the second Professional Examination, is required to produce the following Certificates, viz. :—

1. Of being twenty-five years of age.
2. Of having been engaged for six years in the acquirement of professional knowledge in Hospitals or Schools of Anatomy, Surgery, and Medicine recognized by the Council of the College for that purpose; or if the Candidate be already a Member of the College, he shall produce Certificates of having been engaged for two years in the acquirement of professional knowledge in recognized Hospitals and Schools, in addition to the Certificates required for the Diploma of Member.
3. Of having attended Lectures on Surgery, during one Winter Session at a recognized School.
4. Of having attended a course of Practical Surgery during a period occupying not less than six months prior or subsequent to the Course required by the preceding Clause No. 3, at a recognized School.

Note D.—The course of Practical Surgery referred to in Clause 4 is intended to embrace instruction in which each pupil shall be exercised in practical details, such as in—

- The application of Anatomical facts in Surgery, on the living person or on the dead body.
- The methods of proceeding, and the manipulations necessary, in order to detect the effect of diseases and accidents on the living person or on the dead body.
- The use of surgical Apparatus.
- The examination of diseased structures, as illustrated in the contents of a museum of Morbid Anatomy and otherwise
- 5. Of having attended, at one or more recognized School or Schools, one Course of Lectures on each of the following subjects, viz. :—
 - Materia Medica.
 - Medicine.
 - Forensic Medicine.
 - Midwifery (with practical instruction, and a certificate of having personally conducted not less than ten labours).
 - Pathological Anatomy during not less than three months.

Note E.—The Certificates of attendance on the several Courses of Lectures must include evidence that the Student has attended the Practical Instructions and Examinations of his Teacher in each Course.

- 6. Of having performed operations, on the dead body under the superintendence of a recognized Teacher.
- 7. Of instruction and proficiency in the practice of Vaccination.

Note F.—In the case of Candidates who commenced their Professional Education on or after the 1st of October, 1868, the Certificate of Instruction in Vaccination will only be received from recognized Vaccine Stations, or from recognized Vaccine Departments in Medical Schools or Hospitals, or other Public Institutions, where the appointed Teacher of Vaccination is not liable to frequent change, and where ample means for study are provided by not less than such a number of cases, eight or ten on an average weekly) as may be found, after due inquiry, to be sufficient for this purpose at each place.

- 8. Of having attended the Surgical Practice of a recognised Hospital or Hospitals during four Winter and four Summer Sessions, and the Medical Practice of a recognized Hospital or Hospitals during one Winter and one Summer Session.
- 9. Of having been individually engaged, at least twice in each week, in the observation and examination of Patients at a recognized Hospital or Hospitals, under the direction of a recognised Teacher, during not less than three months.

Note G.—It is intended that the Candidate should receive the Instruction required by Clause 9 at an early period of his attendance at the Hospital.

- 10. Of having attended Clinical Lectures on Surgery during two Winter and two Summer Sessions, and Clinical Lectures on Medicine during one Winter and and Summer Session at one or more recognised Hospital or Hospitals.
- 11. Of having attended, during three Winter and two Summer Sessions, demonstrations in the Post-Mortem Rooms of a recognized Hospital.
- 12. Of having served the office of House Surgeon or Dresser, for not less than six months in a recognized Hospital.

Notice.—The alterations in the Regulations which are applicable to Candidates who commenced their professional studies on or after the 1st of October, 1870, are contained in Classes 3, 5, 6, paragraph I.; in Clauses 3, 4, 5, 9, 10, and 11, paragraph II.; and in Notes A, B, C, D, E, and G, paragraphs I and II. of Section II.

- III. In the case of a Candidate who shall have taken by Examination the Degree of Bachelor or Master of Arts in any University in the United Kingdom recognised by the Council for this purpose, it shall be sufficient for him to produce a Certificate or Certificates that he has been engaged for five years (instead of six years) in the acquirement of professional knowledge in Hospitals or Schools of Anatomy, Surgery, and Medicine recognised by the Council of the College for that purpose.
- IV. Any Member of the College shall, after the expiration of eight years from the date of his Diploma, be entitled to be admitted to the professional Examination for the Fellowship upon the production of a Certificate, signed by three Fellows, that he has been for eight years in the Practice of the profession of Surgery, and that he is a fit and proper person to be admitted a Fellow, if, upon examination he shall be found qualified.

PROFESSIONAL EXAMINATIONS FOR THE FELLOWSHIP.

1. The Examinations are held twice in the year, in the months of May and November, and at such other times as the Council may appoint.
 2. The Examinations occupy not less than two days, either successive or at such intervals as the Court of Examiners may appoint.
 3. The first Examination, on Anatomy and Physiology, is partly written and partly *vivâ voce*, on the recently dissected subject and on prepared parts of the Human Body; the second Examination, on Pathology, Therapeutics, and the Principles and Practice of Surgery and Medicine, is partly written, partly *vivâ voce*, and partly on the practical use of Surgical Apparatus, and includes the examination of Patients, and operations on the dead body.
- * * Candidates can claim exemption from examination in Medicine under the following conditions, viz. :—
- I. The production by the Candidate of a Degree, Diploma, or Licence in Medicine, entitling him to register under the Medical Act of 1858, or a Degree, Diploma, or Licence in Medicine of a Colonial or Foreign University approved by the Council of the College.
 - II. A declaration by the Candidate, prior to his admission to the Final Examination for the Fellowship, that it is his intention to obtain either of the Medical Qualifications mentioned in the foregoing paragraph, in which case the Diploma of the College will not be issued to him until he shall produce either the said Medical Qualification or proof of having passed the several examinations entitling him to receive the same.
- N.B.—A Candidate who has passed an examination in Medicine for the

Membership will not be required to pass any further examination in Medicine for the Fellowship.

4. Prior to his admission to his First or Anatomical and Physiological Examination, the Candidate is required to pay—
 - a. A fee of Five Guineas, to be allowed on the fee for the Diploma of Fellow, but to be retained in case of rejection.
5. Prior to his admission to the Second professional Examination, the Candidate is required to pay—
 - a* A fee of Five Guineas (if a Member) over and above all charges for stamps, to be retained in case of rejection.
 - b* A fee of Twenty-five Guineas (if not a Member) over and above all charges for stamps, of which Five Guineas will be retained in case of rejection.
6. A Candidate whose qualifications shall be found insufficient on his Anatomical and Physiological Examination shall be referred, and shall not be allowed to present himself for re-examination until after the expiration of six months from the date of his reference.
7. A Candidate whose qualifications shall be found insufficient upon his Pathological and Surgical Examination shall be referred, and shall not be allowed to present himself for re-examination until after the expiration of one year from the date of his reference, unless the Court of Examiners shall otherwise determine.

* The sum of £2 paid on the Preliminary Examination will be allowed against these amounts.

Table showing the order in which the Lectures may be attended each Session for the Membership and the L.D.S.

FIRST WINTER SESSION.—Anatomy, Chemistry, Anatomical Demonstrations, Physiology, Hospital Attendance and Surgical Clinical Lectures, &c.

FIRST SUMMER SESSION.—Materia Medica, Botany, Practical Chemistry, Practical Physiology and Histology, Hospital Attendance, &c., Dental Surgery, Dental Mechanics, Dental Hospital Practice.

SECOND WINTER SESSION.—Medicine, Surgery, Anatomy, Anatomical Demonstrations, Hospital Attendance, Clinical Lectures, &c., Dental Anatomy, Metallurgy, Dental Hospital Practice.

Pass Primary Examination.

SECOND SUMMER SESSION.—Medical Jurisprudence, Midwifery, Comparative Anatomy, Hospital Attendance, &c., Dental Surgery, Dental Mechanics, Dental Hospital Practice.

THIRD WINTER SESSION.—Medicine, Surgery, Pathology, Clinical Lectures, Hospital Attendance, Dental Anatomy, Dental Hospital Practice.

THIRD SUMMER SESSION.—Practical Pharmacy, Hospital Attendance.

FOURTH WINTER AND SUMMER SESSIONS.—Hospital Attendance, &c.

Table showing the Order in which the Lectures may be attended each Session for the L.D.S. only.

FIRST WINTER SESSION.—Anatomy, Dissections, Physiology, Chemistry, Hospital Practice and Clinical Lectures (Surgical), Dental Anatomy (?) Metallurgy, Dental Hospital Practice.

FIRST SUMMER SESSION.—Practical Chemistry, Materia Medica, Dental Surgery, Dental Mechanics (?), Dental Hospital Practice.

SECOND WINTER SESSION.—Anatomy, Dissections, Medicine, Surgery, Hospital Practice and Surgical Clinical Lectures, Dental Anatomy, Dental Hospital Practice.

SECOND SUMMER SESSION.—Dental Surgery, Dental Mechanics, Dental Hospital Practice.

The order in which the several courses of lectures are delivered in the different schools is somewhat varied, but the foregoing arrangement can be taken as an example.

The special Dental subjects are arranged according to the calendar of the National Dental College; and to suit the calendar of the London School of Dental Surgery transpose Dental Mechanics for Dental Anatomy.

A List of Books for the Dental Student,

ANATOMY.—Gray's Anatomy. Heath's Practical Anatomy.

PHYSIOLOGY.—Kirke's Handbook of Physiology.

SURGERY.—Druitt's Surgeon's Vade Mecum. Erichsen's Science and Art of Surgery. Heath's Injuries and Diseases of the Jaws.

MEDICINE.—Tanner's Practice of Medicine. Hooper's Physician's Vade Mecum.

HISTOLOGY.—Stricker's. Juain's Anatomy.

CHEMISTRY.—Roscoe's Lessons in Elementary Chemistry. Fowne's Manual.

METALLURGY.—Makin's Manual.

DENTAL ANATOMY.—C. S. Tomes.

DENTAL SURGERY.—Tomes. Salter. Wedl.

DENTAL MECHANICS.—Coles.

DENTAL MATERIA MEDICA AND THERAPEUTICS.—(In the Press), Stocken.

DENTAL STUDENTS' NOTE BOOK.—Edited by Oakley Coles.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of Messrs. SMITH, ELDER, & Co., 15, Waterloo Place, Pall Mall.

ALL inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4, Crane Court, Fleet Street, E.C.

THE MONTHLY REVIEW

OF

DENTAL SURGERY.

No. IV.

SEPTEMBER, 1877.

VOL. VI.

The Conference in Edinburgh.

At another page will be found a copy of a circular, issued to members of the profession, relative to a conference of dentists to be held in Edinburgh on the 6th proximo.

We are glad to learn that our brethren in Scotland are thus bestirring themselves in a cause worthy of the attention and sympathy of all who have the welfare of the profession at heart.

What we said last month of the Irish Dental Diploma Committee we now say in a still more concrete form to the embryonic Scotch Committee—state fully and plainly what you want.

We would furthermore breathe forth what we tersely said in our July issue—that legislation, to be effectual, to be good, must have a relation to the nature of the humanity.

Let the spirit of close co-operation exist among the promoters; let their scheme be comprehensive; let them purge and anoint.

That there is a demand for a qualification to be obtained on easy and “accessible terms,” and that that demand is dominant, we would draw the attention of our readers to the wholesale use of “bogus” degrees by, and the insatiable appetite of, the gormand who is one of many such unblushing correspondents of the Dean of Harvard Univer-

sity, whose letter we publish. The suburban "Brumigem" vilifier of *honoris causa* is a type of one element of our profession which the promoters of the various schemes have to consider.

We trust the Scotch Committee, in steering their movement through the surf of wrangling, will fully estimate the principle of sacrifice of present pleasure to future happiness; and remember that legislation fails to work immediate wonders when the incident forces are not thereby embraced: that results not anticipated from a law are frequently greater in amount and more injurious than results anticipated. Let it be remembered, also, that though human nature is not immutable, it is not easily changed. If men would fully comprehend these abstract principles we should have less inconsistency, more unanimity; and the results expected more practical, and less theoretical and disappointing.

We have already pointed out that the true way to advance the profession is by EDUCATION, and consequently by providing educational facilities. In the meantime let a general registration be effected. We are persuaded that if the Scotch Committee thoroughly work out the former subject as it applies to Scotland, and co-operate with the Dental Reform Committee in obtaining compulsory registration, their scheme will have a fair prospect of success, inasmuch as it will thus contain a proviso which will afford a guarantee of protection to those who obtain the qualification sought to be instituted.

The Month.

THE DENTAL DIPLOMA.

In our April issue we drew attention to the fact that those gentlemen who intended beginning their professional education for the dental diploma at a General Hospital, without first passing the preliminary ex-

amination, would have to do so at the commencement of the then ensuing Summer Session. We would again remind intending students of the new regulation of the College of Surgeons, which requires that "all Candidates who shall commence their Professional Education on or after the 1st of October, 1877, will be required to produce a certificate of having prior to such commencement passed the Preliminary Examination in General Knowledge for the Diploma of Member of the College, or an examination recognized as equivalent to that examination." Gentlemen who intend beginning their professional education, and wishing to be relieved of the necessity of first passing the preliminary examination, can now only do so by entering the Hospital Practice of a recognised Dental Hospital before the 1st October.

We have received several communications which indicate that not a few think that serving articles as a pupil is part of professional education. If such were the interpretation of Professional Education as used by the College of Surgeons, then it would be necessary for all who shall commence serving their articles, or "professional education," on or after the 1st October, 1877, to first pass the preliminary examination in arts. Such would be a state of professional advancement for our children's children to consider. It must be apparent then, that the more reasonable interpretation of Professional Education is the education received at either a special Dental or General Hospital, recognised by the College of Surgeons.

THE "STUDENT'S" NUMBER.

Contrary to custom, we issued our "Student's" Number last month, instead of in September as usual. For the reasons then stated, we think the change an advantageous one.

DENTAL MATERIA MEDICA AND THERAPEUTICS.

By JAMES STOCKEN, L.D.S., R.C.S.

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(Prepared by desire of the Medical Committee of the National Dental Hospital).

Continued from page 108.

PYRETHRI RADIX.—PELLITORY ROOT.

Synonym.—Pellitory of Spain.

Botany.—The dried root of *Anacyclus Pyrethrum* belonging to the Natural Order *Compositæ*. The Composite Order. Imported from the Levant, Barbary and Spain.

Characters.—A fusiform root, about the length and thickness of the little finger, having a thick brown bark, studded with black shining points; breaks with a resinous fracture, and presents internally a radiated structure.

Physiological Effects and Therapeutics.—An energetic local irritant and sialogogue; chewed it causes pricking in the mouth, a flow of saliva and buccal mucus, and is said to relieve some rheumatic and neuralgic affections of the head and face; also paralysis of the tongue and muscles of the throat. In relaxation of the throat and uvula it is employed in the form of gargle. Pellitory is not given internally.

The tincture is used to relieve tooth-ache.

PYROXYLIN—PYROXYLIN OR GUN COTTON.

Characters.—Has the appearance of ordinary cotton, is highly electric on friction, insoluble in water. It explodes at a temperature of 300°F leaving no carbonaceous residue. If the explosion be conducted on litmus paper the latter is reddened. If on starch paper, moistened with iodine of potassium, the nitrous acid formed sets free the iodine, and produces the blue iodised starch.

It is readily soluble in a mixture of ether and rectified spirit forming collodion.

Preparation.—By immersing cotton in equal parts by measure of sulphuric and nitric acid, washing until the filtrate ceases to give a precipitate with chloride of barium, and then draining the product on filtering paper, and drying in a water-bath.

Uses.—Used in the preparation of collodion.

QUININÆ HYPOPHOSPHIS—HYPOPHOSPHITE OF QUINIA.

Formula.— $C_{40}N_2H_{24}O_4POHO + 2HO$.

History and Characters.—It was first prepared under the direction of Dr. Churchill by Swann of Paris in 1856. As prepared by him this salt is an amorphous substance of honey-like colour, very soluble and deliquescent, of an intensely bitter taste. It has the consistence of soft wax, takes fire when heated, and burns like resin. This is a different compound from that met with in the trade under the same name, which is obtained by double decomposition between hypophosphite of lime or baryta and sulphate of quinine. It is in white needles and is most frequently an

impure product, consisting of a mixture of hypophosphite of quinine, sulphate of quinine, sulphate of lime or baryta. Dr. Churchill says the only preparation fit for medicinal purposes is that prepared by Swann.

Preparation.—By dissolving the alkaloid quinia in hypophosphorous acid, or by decomposing sulphate of quinia with hypophosphite of baryta, filtering and evaporating the solution.

Physiological Effects and Therapeutics.—In all cases where the hypophosphites are indicated, it has a lower activity than the other hypophosphites, which is easily accounted for by the small proportion of acid it contains. It is thus useful when the other salts may be found too active.

One grain of hypophosphite of quinine is equal to rather more than $\frac{1}{10}$ of a grain of phosphorus.

Dr. Churchill believes the hypophosphite of quinine will in time be looked upon as the most efficient preparation of this alkaloid.

In the first teething of children he seems to give preference to the lime preparation of the hypophosphites, and speaks of it producing an *heroic* effect, and, if properly used, will act as a preservative agent against all the accidents of this difficult period of life. When given to teething children who are pale, peevish, sad, emaciated, without appetite or strength, suffering from fever and diarrhoea, loss of sleep, and apparently in imminent danger of convulsions, he has never seen a single case where the whole of these symptoms have not yielded to a few doses of the syrup, and the evolution of the teeth afterwards proceed as if in perfect health.

QUININÆ SULPHAS—SULPHATE OF QUININE.

Formula.—Old: $C_{40} H_{24} N_2 O_4 HO, SO_3 \times 7 HO$.

New: $(C_{20} H_{24} N_2 O_2)_2 H_2 SO_4 7 H_2 O$.

Characters.—Filiform silky snow-white crystals of a pure intensely bitter taste, sparingly soluble in water, yet imparting to it a peculiar bluish tint; dissolves readily in diluted sulphuric acid.

Preparation.—The bark is exhausted by maceration and percolation, with diluted hydrochloric acid, and the solution treated with a slight excess of solution of soda; the precipitated quinia is washed, and then very nearly dissolved in diluted sulphuric acid; a neutral liquid is thus obtained

which is filtered, concentrated, and crystallised. The crystals should be dried on filtering paper without heat.

Physiological Effects and Therapeutics.—A valuable tonic and anti-periodic, possessing in an eminent degree the properties for which cinchona has been justly celebrated.

In *tic-douloureux* and other neuralgic affections, it holds a foremost place in our list of remedies. In neuralgia of malarial origin, there can be no doubt of the value of quinine. It may be given in full doses (gr. 5 to 20) shortly before the time at which the attack of pain is expected, but if after three or four doses a decided improvement is not effected, the probability is great that the neuralgia is not malarial. In a certain number of non-malarial cases also, quinine produces a good effect, when gr. 2 to 3 thrice daily is the largest quantity which is likely to be of any use.

In *cancrum oris*, when the constitution requires tonics and stimulants in order to support the strength, Dr. Graver strongly recommends quinine.

In apthous ulcerations and scurvy, where the constitution is much debilitated, it is highly serviceable.

When the bitter taste is objectionable, as in the case of young children, amorphous quinine, which is insoluble in saliva, but readily so in gastric juice, may be advantageously substituted, and even when given to adults in large doses, it is perhaps better to give it in suspension, as the bitterness is not then so intense.

SANDARACH—JUNIPER RESIN.

Botany.—A resin obtained from the *Callitris Quadri-valvis*, a plant belonging to the natural order *Pinaceæ* or *Conifera*. The Pine Order. French Sandarach is the commercial name of the resin of the *Pinus Dammara*.

Uses.—It is used as a substitute for mastic. Dissolved in spirits of wine (methyated) it is useful as a varnish for plaster models. If it be desirable to make the surface very hard, dilute some of the varnish with spirit (to render it more easy of absorption) and apply several coats until a smooth surface be obtained.

SAPO DURUS—HARD SOAP.

Prepared by boiling olive oil with a solution of soda till the whole forms a thick viscid solution. The alkali is

added gradually, and when saponification is complete, the soap is separated from the excess of alkali, the glycerine, and the superfluous water by the addition of common salt.

The soap rises to the surface, and is ladled off into moulds, where it is stirred to promote the separation of the liquid.

It is an antacid, and on that account is often introduced into tooth powders.

Dissolved in methylated spirit, it forms an excellent varnish for plaster models in casting bites.

SINAPIS—MUSTARD.

Botany.—The seeds of *Sinapis Alba* and *Sinapis Nigra*, belonging to the Natural Order, *Cruciferae*. The Cruciferous or Cabbage order.

Characters.—Small round seeds, yellow inside. Those of *S. Alba* are yellow outside, those of *S. Nigra* are black and somewhat smaller.

Chemistry.—Its activity is due to the essential oil, produced from the black mustard by the mutual action of myronate of potassium and myrosin in the presence of water.

Physiological Effects and Therapeutics.—In small doses it is a stimulant. In doses of from one to three teaspoonsful it is an efficacious emetic, effectually clearing out the stomach without producing any great amount of subsequent depression. Externally applied in the form of poultice, it is irritant, and if left in contact with the skin for a long period causes vesication.

In inflammation of the tonsils, sinapisms to the throat are very useful.

In tooth-ache, face-ache, and neuralgic affections of the head and face, a sinapism over the seat of pain often affords great relief.

Mustard leaves are an excellent substitute for the ordinary mustard poultice, being cleanly and more convenient.

SPIRITUS ETHERIS NITROSI—SPIRIT OF NITROUS ETHER.

Synonym.—Sweet Spirits of Nitre.

A spiritous solution containing Nitrous Ether (Nitrite of Ethyl). C_2H_5ONO , or $C_2H_5NO_2$.

Characters.—Transparent and nearly colourless, with a

very slight tinge of yellow, mobile, inflammable, of a peculiar penetrating apple-like odour, and sweetish cooling sharp taste. Sp. grav. 0.845. Should not effervesce with Bicarbonate of Soda.

Preparation.—Prepared by distilling at a temperature between 170 and 180°, a mixture of nitric acid, sulphuric acid, and rectified spirit.

Physiological Effects and Therapeutics.—Refrigerant, diuretic, and diaphoretic. It is chiefly used as an adjunct to other remedies of the same class. To obtain its diaphoretic and refrigerant effects, it is best combined with liquor ammoniæ acetatis; to obtain its diuretic action, with squill, &c.

Dose.—Half to two drachms.

SEPIA OFFICINALIS—COMMON CUTTLE FISH.

Natural History.—Belonging to the class Cephalopoda—Cephalopods. A class of mollusks which have the *body* inclosed in a bag (mantle). *Head* protruding from the bag. The substance called os sepia, or cuttle-fish bone, is an oval or oblong calcareous bone (sometimes termed shell) deposited in the mantle of the animal.

Characters and Uses.—Os Sepia has a cellular texture, and is so light as to float on water; when dried and ground into powder it constitutes *pounce*. It enters largely into the constitution of tooth powders. It is employed for several purposes in the arts, as for polishing, for forming moulds for small silver castings, &c.

STRYCHNOS NUX VOMICA—NUX VOMICA.

Synonyms.—Koochla, or Poison Nut Tree.

Botany.—The seeds of Strychnos Nux Vomica belonging to the Natural Order, *Loganiaceæ*. The Spigelia or Strychnos order. Growing in and imported from the East Indies.

Characters.—The seeds are nearly circular, about an inch in diameter, flat, or very slightly convex on the dorsal surface, and concave on the other or ventral surface, and are usually surrounded by a filiform annular stria. In the centre of the ventral surface is the rounded hilum or umbilicus.

Physiological Effects and Therapeutics.—The seeds and the bark are powerful stimulants of the nervous system and spinal cord. Their activity resides in the alkaloids strychn-

nia and brucia. In large doses it causes twitching of the muscles, followed by tetanic rigidity and death from asphyxia; paralysed parts are more readily affected than those which are sound. It is much used in the treatment of paralysis, more especially when depending on lead poisoning: also in mercurial paralysis, and in that resulting from rheumatism. It has been used in neuralgia with good effect.

Some constitutions are peculiarly susceptible to its action; hence it should always be commenced with the smallest doses, and gradually and cautiously increased, its effects being carefully watched.

Muscular stiffness or convulsive twitchings in the extremities is a certain indication that the remedy has been carried to its full extent, and should at once be discontinued. During its exhibition the use of tobacco should be abandoned, its operation on the system being antagonistic.

Dose.—Tincture of Nux Vomica, 5 to 20 minims; strychnine, $\frac{1}{10}$ of a grain.

Antidotes.—Evacuate the contents of the stomach. Infusion of tobacco; extract of conium; hydrate of chloral.

SIPHONIA ELASTICA—ELASTIC GUM.

Synonyms.—Caoutchouc, or India Rubber.

Botany.—A concrete juice obtained by incisions from the *Siphonia Elastica*, a plant belonging to the Natural Order, *Euphorbiaceæ*. The Euphorbium or Spurge Family. A native of Brazil and Guiana. Nearly all the India rubber used in this country is obtained from this and other species.

The substance called vulcanized India Rubber is a compound of sulphur and caoutchouc combined by the agency of heat; by a protracted and increased heat this is converted into a horny substance, called vulcanite.

Solvents.—Ether (washed), benzine, chloroform, tar, naphtha, &c.

SODÆ BIBORAS—BIBORATE OF SODA.

Synonym.—Borax.

Formula.—Old: $\text{Na}_2\text{O}, 2, \text{BO}_3 \times \text{HO}$.

New: $\text{Na}_2 \text{B}_4 \text{O}_{10} \text{H}_2 \text{O}$.

History.—It is imported from the East Indies, where it occurs in a native state, under the name of Tincal.

Characters.—In transparent colourless crystals, soluble in water, still more so in glycerine, insoluble in spirit. It has an alkaline reaction; when in solution it absorbs carbonic acid; and dissolves fibrine, albumen, casein and uric acid.

Preparation.—It is also made artificially in Tuscany by boiling together in proper proportions boracic acid and carbonate of soda.

Physiological Effects and Therapeutics.—Refrigerant, diuretic, and emmenagogue. Its action is very similar to that of carbonate of soda. Its curative properties in apthous affections are very questionable; its mild alkaline qualities may improve the condition of the skin and mucous surfaces.

Other Uses.—Plaster casts may be rendered extremely hard by its use, thus: thoroughly dry the cast, then immerse it for a few minutes in a solution of borax in boiling water, and set aside to cool. It is also employed as a flux in fusing and soldering metals.

SODÆ BICARBONAS—BICARBONATE OF SODA.

Synonyms.—Acid Carbonate of Sodium, Sesquicarbonate of Soda.

Formula.—Old: $\text{NaO}, \text{HO}_2\text{CO}_2$ New: Na H CO_3

Preparation.—By passing carbonic acid gas into a mixture of carbonate and dried carbonate of soda until it is no longer absorbed. The damp salt formed is then shaken with half its weight of distilled water, and the insoluble portion is drained, and dried by exposure to the air.

Physiological Effects and Therapeutics.—Neuralgia connected with acidity of the stomach is often speedily relieved by a full dose of the carbonate of soda. Aphthæ in children is often relieved by a few doses in combination with a little rhubarb. A small portion put into a carious tooth often relieves toothache.

It is very useful in neutralising the acid secretion of the mouth, whether arising from pregnancy or other causes. It is also a desirable adjunct to tooth powders.

SODÆ HYPOPHOSPHIS—HYPOPHOSPHITE OF SODA.

Formula.—Old: $\text{NaO}, \text{PO}_2\text{HO}$. New: $\text{Na PH}_2 \text{O}_2$

Characters.—It is very soluble both in alcohol and water, and when carefully evaporated may be obtained in prismatic crystals which are very deliquescent.

Preparation.—This salt is prepared by adding carbonate of soda in solution, to solution of hypophosphite of lime as long as a precipitate is formed, separating the soluble hypophosphite of soda from the precipitate, and evaporating the former to dryness, digesting in alcohol, which dissolves the hypophosphite, and evaporating carefully in vacuo to crystallization. It is said to be subject to explosion if much heat be applied in the evaporation, evolving phosphuretted hydrogen.

Physiological Effects and Therapeutics.—Its medicinal properties are similar to those of hypophosphite of lime, which see.

SODÆ PHENAS—PHENATE OR CARBOLATE OF SODA.

Formula.— $\text{Na C}_6\text{H}_5\text{O}$.

Characters.—

Preparation.—May be obtained by neutralising solution of hydrate of soda, or its carbonate, with phenic or carbolic acid.

Physiological Effects and Therapeutics.—Hæmostatic, antiseptic, and disinfectant; it is highly recommended as an astringent and styptic application to check excessive bleeding after tooth extraction, and prevent subsequent soreness of the gum. It causes rapid absorption of the extravasated blood, thereby preventing fœtor of the breath, and facilitates the speedy closing, healing, and hardening of the gum.

It is said to give almost magical relief to the *after-pains* of extraction. It may be applied upon cotton, over and around the alveolus, but so placed as not to interfere with the closure of the cavity by the clot, and the kind and prompt healing likely to result from its retention. It is preferable to the ferruginous preparations as a hæmostatic; it is not escharotic but sedative and antiphlogistic in its action. As a mouth wash it is highly recommended in cases of soft, spongy, or swollen gums, which bleed at the slightest touch. Used of various degrees of strength from its full strength to 1 in 12 of water.

THYMOL—THYMOL.

Formula.— $\text{C}_{10}\text{H}_{14}\text{O}$.

Botany.—Thymol occurs together with Thymene and Cymene in the volatile oil of the *Thymus Vulgaris*, or

Common Thyme, a member of the natural order *Labiata* or *Lamiaceæ*. The *Monarda Punctata*, or Horse Mint, belonging to the same order, likewise contains it, as does also the *Ptycholes Ajowan*, an East Indian plant belonging to the order, *Umbellifera*.

Characters.—In transparent rhomboidal plates, having the odour of Thyme, soluble in water, slightly deliquescent and having a peppery taste.

Preparation.—Sometimes it crystallises out spontaneously from the oil. It may be separated by agitating the oil with solution of soda, and supersaturating the alkaline liquid with hydrochloric acid.

Physiological Effects and Therapeutics.—Stimulant to capillaries, also useful in peripheral neuralgia.

ZINCI CHLORIDUM—CHLORIDE OF ZINC.

Formula.—Old: Zn Cl . New: Zn Cl_2 .

Characters.—A white crystalline semi-transparent mass, rapidly absorbing water if exposed to the air; soluble in rectified spirit, æther, and water.

Preparation.—Obtained by the action of hydrochloric acid on granulated zinc, purifying the solution by the addition of solution of chlorine, evaporating to a proper consistence, and poured into moulds to solidify.

Uses.—A valuable escharotic to sensitive dentine, but, except in cases where rapidity of action is needed, carbolic acid is preferable, in consequence of the severe dull pain caused by its application.

It is an excellent agent applied to teeth denuded of their enamel. Properly diluted it is a valuable disinfectant.

ZINCI SULPHAS—SULPHATE OF ZINC.

Synonym.—White Vitriol.

Formula.—Old: $\text{ZnOSO}_3 \times 7\text{HO}$. New: $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$.

Characters.—In colourless transparent prismatic crystals, with a strong metallic styptic taste, freely soluble in water, and insoluble in alcohol.

Preparation.—Obtained by dissolving granulated zinc in dilute sulphuric acid, purifying the solution by means of chlorine and carbonate of zinc, evaporating and crystallizing.

Physiological Effects and Therapeutics.—Tonic, astringent,

and anti-spasmodic, in doses of one grain, gradually increased. In doses of 10 to 20 grains it proves emetic, acting promptly and effectually, leaving little subsequent depression. In cynanche tonsillaris, when the abscess is so situated that it cannot be opened by the lancet, it has been proposed as an emetic, for under the exertion of vomiting the abscess will often burst, and for this purpose none is better than sulphate of zinc. In gangrene of the mouth in children, this agent (20 grains) well incorporated with honey (1 ounce) forms a very useful topical application.

(Concluded.)

History of the Anæsthetic Gas.

By S. PARSONS SHAW, MANCHESTER.

It has always appeared to me necessary, in writing on any subject, that the writer should have, at least, some knowledge of the matter under consideration. With many this would appear to be of small significance. It may be so; yet I hold to my opinion so strongly that, with the kind permission of the editor of the *Review*, I will endeavour to correct a statement that appeared in the June number, to which my attention has been called, purporting to give the history of the anæsthetic gas. I venture to approach the subject the more readily because it so happens that I have some personal knowledge of this matter, and from my own experience know that the gas was used before any one pretends to have employed any other agent as an anæsthetic.

The statement referred to is as follows, and will be found in an article in other respects not only unobjectionable but most interesting:—"Its"—the anæsthetic gas—"applicability as an anæsthetic in surgery was first noticed by the late Sir James Sympson in 1847; but it was not until twenty years afterwards that it came into general use. About this time"—1867—"the attention of the late Horace Wells and Drs. Colton and Cotton was directed to its applicability in dental surgery. It was introduced by the latter to Dr. Evans, of Paris, and by him, in 1868, to the dental profession in England."

It is not often that a writer manages to be in error in every particular; yet I think Mr. Stocken may fairly claim

the honour of having achieved this difficult and ingenious feat. Now, the applicability of the gas as an anæsthetic was not first noticed by Sir James Sympson, but it was pointed out as early as 1801 by Sir H. Davy. Nor had Sir James Sympson the least to do in making the gas known; nor was he, as seems to be so readily assumed, the author of the anæsthetic discovery. To him is due the great honour of having introduced chloroform *after* both the gas and ether had become well-known as anæsthetics; and also of introducing anæsthesia into England, and being the first to use it in obstetric practice. Beyond this Sir James Sympson makes no claim; and his admirers would do well to notice his candour and modesty. It was not twenty years after 1847 that the attention of the late Horace Wells was directed to the applicability of the gas in dental surgery, for he died in 1845. There is no Dr. Cotton in the case; and this is an evident mistake for Colton. The gas was not introduced by Colton to Dr. Evans, of Paris, for that gentleman could not possibly have been ignorant of its anæsthetic history from the beginning. His agency in this matter was to make known to the London dentists an anæsthetic then, and for a long time before, in almost universal use with the American dentists. But the fact of having spent a hundred pounds for such a purpose does not, in my opinion, give him any status in this matter. If so small an expenditure will for ever connect a name with so great a discovery there will be no difficulty in finding numbers of men willing to invest a like sum on the same terms. It is not a matter of the smallest importance, but I had in Manchester one of the apparatuses in common use in America before the gas was known in London. So far from taking credit for this I have never ceased to blame myself for not having one ten years before; my only excuse being that I kept hesitating in introducing it simply from the dislike of meeting the mean and interested opposition sure to follow anything new. Instead of being a new agent, as frequently represented, brought into notice twenty years after chloroform, the protoxide of nitrogen—up to that time popularly known as “laughing gas”—was the agent by which the anæsthetic discovery was made by Dr. Horace Wells, a dentist, in Hartford, Connecticut, in 1844. From observing that a

person who was under its influence felt no pain when severely hurt by falling, he reasoned out the anæsthetic theory in the most logical and philosophical manner; and then took the gas and had an aching tooth extracted to test the accuracy of his conclusions. The experiment was a perfect success; and he at once proclaimed his discovery. Colton's connection with the matter is this. He was a lecturer who travelled the country giving a short account of the gas, and then administering it. As it was at one of these exhibitions that Wells got the hint above referred to, consequently Colton was the man who first gave the gas for anæsthetic purposes. He was evidently much struck with the discovery, for I remember that he gave an account of it a few months after to a party who had met at his rooms in Boston; and from that time he has been most industrious in introducing the gas into notice as an anæsthetic. In a short time after his discovery Wells also went to Boston to introduce it to the profession in that city; his reception was not such as reflected credit on the gentlemen he there met. They literally laughed him to scorn; and no amount of sophistry and misrepresentation can ever obliterate this disagreeable fact. I saw Wells on that visit to Boston, but was too young to have any opinion on the matter. In a few months later however—in the summer of 1845—I happened to be in Hartford, and assisted in painless tooth extractions by means of the gas, using for that purpose the very apparatus set up by Wells for his primary experiments. He was then in New York, meeting with no better success than in Boston.

When Wells went to Boston he made his head quarters with one Morton, a man holding an inferior position as a dentist, although he had, I think, at one time been a pupil of Wells. Morton had been unable to appreciate Wells' discovery; so much so that when, in the autumn of 1846, a man who had heard of Wells' experiments at Morton's rooms called to have a tooth removed by the painless process, he undertook, at first, to dissuade him; but, finding he should lose his fee if he did not do something, he conceived the brilliant idea of deceiving his patient by letting him breathe common air from one of the india-rubber bags in which the gas was then administered. Not having a bag he applied to the office of Dr. Jackson, the chemist,

a few doors away, and there first met Dr. Kendall, Jackson's assistant, from whom I had the particulars of this celebrated interview. Both Kendall and Jackson discountenanced so foolish a trick as the one he proposed; and, during the conversation, Jackson suggested the use of ether. Morton was so ignorant as to ask if it was a powder!

Eventually, a quantity of sulphuric ether was supplied him, and he thereby established *etherization*. The idea of anæsthesia having been promulgated by Wells, two years had given it time to digest, and when so convenient an agent as ether was suggested it was tried, and anæsthesia became an established fact. It may be disputed who has the credit of etherization, whether it belongs to Jackson or Morton, but there can be no question as to the fact that Horace Wells introduced anæsthesia to the world in 1844, and that this great discovery was by means of the gas.

In 1847, Sir James Sympson introduced chloroform. Much has been written on this subject, but the English reader will find all he requires to set himself right as to the facts, by consulting Sir James Sympson's writings. This authority makes the matter clear beyond a doubt.

Venomous Animals.

By SIR J. FAYRER, K.C.S.I., M.D., F.R.SS. L. and E.

(Abstract from "*Edinburgh Medical Journal*.")

ANIMALS that possess the power of secreting and ejecting a poison, the effects produced by inoculating this secretion in man or other animals, and the appropriate treatment, will be briefly described in this paper. Poisons generated in diseased, enraged, or otherwise disordered animals, or such as may be formed after death by decomposition, or those by which teeth, claws, spurs, or other weapons of carnivora, predaceous birds, and fish or invertebrata, may be accidentally contaminated, are not included: for these refer to descriptions of rabies—hydrophobia, animal poisons, septicæmia. Nor are the effects produced by eating the flesh or drinking milk diseased or disordered by any cause included. It is known that the use of certain articles of food—certain states of health—changes during breeding,

and in decomposition, may render the flesh or secretions of living creatures unwholesome, or even poisonous, but for descriptions of these refer elsewhere.

VERTEBRATA.

Mammalia.—The higher orders of vertebrata apparently have no venomous representatives, though the male monotremes, *Echidna*, and *Ornithorhynchus paradoxus*, are armed with a perforated tarsal spur, communicating with a crural or popliteal gland, which seems analogous to the poison apparatus in other creatures; no authenticated case of poisoning by this weapon, however, is on record, and its true use seems not to have been yet determined. Evil result following a puncture from this weapon, or from teeth, claws, or spurs of this or other mammal, may rather be attributed to the puncture than to an inoculated venom.

Aves have no known poisonous representative. Ill effects from wounds inflicted by their claws, beaks, or spurs may be referred to the lacerated or punctured nature of the wound, or to accidental contamination by extraneous septic matter.

Reptilia furnish the most numerous and important examples of venomous animals, and these are limited almost entirely to the order Ophidia, which has three subdivisions: *O. Colubriformes*, innocuous, *O. colubriformes venenosi*, and *O. viperiformes*, venomous. These are distributed widely over the globe, land and sea. The most venomous are generally denizens of warm climates.

The poison apparatus of a snake consists of a composite racemose gland, situated in the temporal region, which secretes a clear, slightly viscid fluid, that is poured through a duct into a grooved fang situated on a moveable maxillary bone, capable of erection and reclination, to a greater extent in viperine than in colubrine snakes, by the action of muscles which push forward the ectopterygoid and maxillary bones, raise the fang, at the same time compress the gland and eject the poison through the duct into the groove in the fang; it is thus hypodermically injected into the bitten part.

The fangs are longer, more curved, more moveable, and more formidable in viperine than in colubrine snakes—they are deciduous, and when lost by accident or by the process of shedding, are quickly replaced by reserve fangs that lie

loose in a fold of mucous membrane. On the loss of a fang the most advanced of the reserves quickly takes its place, becoming ankylosed to, and moving with the maxillary bone.

The groove is on the convex aspect of the fang, and opens near the point for emission of the venom. There is an opening at the base of the fang, into which the poison is shed from the papillary orifice of the poison duct. This at the time of emission becomes closed in by a fold of mucous membrane, so that the poison is directed into the groove in the tooth.

Viperine snakes can recline or erect each fang independently of the other. This power is limited in colubrine snakes. The difference may be well seen in *Naja tripudians*—cobra; and *Crotalus horridus*—rattlesnake. The poison is secreted in considerable quantities; half a drachm may be collected from a fresh and vigorous cobra. It is a clear, slightly viscid fluid, and very deadly in its action, probably more active in some snakes, quantity for quantity, than in others, and varying in activity in the same species or individual, according to season, temperature, state of health, &c. It acts most rapidly when injected into the blood; but it can be absorbed through mucous and serous membranes, as seen by its poisonous effects when applied to the conjunctiva, the stomach, the peritoneum. It may neither be applied to the lips nor taken into the stomach with impunity, and sucking a snake bite is by no means free from danger, though if the saliva be quickly ejected and the mouth washed, the danger is probably small. It contains an active principle, which has been described as echidnine, viperine, crotaline. Analysis has shown the poison to be very nearly like albumen in composition. It is most active in its action on warm-blooded creatures, but it takes effect in all. It appears, however, that poisonous snakes are very insensible to the venom of other species of poisonous snakes. A cobra is not poisoned by another cobra's venom, but it is probably affected by that of other species; and so with the others. But innocuous snakes, other reptiles, amphibia, birds, mollusca—indeed all life—succumb to it. Further analysis of the poison is needed. Though differing in activity and slightly in mode of action, the *modus ledendi* is essentially the same in all snakes.

The action of the poison is local and general.

Local.—Pain, partial paralysis of the bitten part, ecchymosis, swelling, and if death does not rapidly follow, infiltration of other and distant parts, cellulitis, sloughing.

General.—Depression, fainting, nausea, hurried respiration, vomiting, exhaustion, lethargy, loss of co-ordinating power, paralysis, loss of consciousness, hæmorrhagic discharges, relaxation of sphincters, coma, convulsions, death. If the quantity of poison injected be small or its nature feeble, the earlier symptoms may give way and recovery take place. Snake poison acts by paralyzing the nerve centres—sometimes the peripheral distribution of the nerves, and by altering the constitution of the blood. It takes effect through the circulation; and if inserted into a large vessel, such as the jugular, humeral, or axillary veins, it will cause almost instant death—the heart's action stopping, systolic spasm.

There is reason to believe that the numerous agents that have been recommended from the earliest times as antidotes are useless, and have no such properties as those ascribed to them.

The rational treatment of snake poisoning is that of endeavouring to prevent the entry of the virus into the circulation, to support the failing nervous force if it have entered, and to aid in its elimination by all possible means.

The application of a ligature applied tightly between the bite and the heart, the immediate excision or destruction by cautery or caustic of the bitten spot is essential, and such other local measures subsequently as appear necessary.

The constitutional treatment requires that the strength should be supported. Stimulants, such as alcohol and ammonia, have always been in repute, and probably with justice, though not in the sense to which the term antidote is frequently applied. Next—and if the respiration be failing, the use of artificial respiration should be resorted to. Elimination by the skin and kidneys should be encouraged and promoted by stimulating diuretics. The patient should be kept warm. It is not reasonable to make him exert himself by walking about; he is already sinking from nervous prostration, and forcing him to exhaust himself more is not likely to do good. Ammonia has always held a high place among remedies in snake poisoning, and its injection into the veins has been warmly advo-

cated in Australia, and seems to have met with success there that it had not in India. In cases of moderate severity, and happily many are so, remedies with careful nursing and tending may prove successful, but where the bite has been thoroughly effected by the cobra, daboia, rattlesnake, craspedocephalus, cerastes, and others, the prognosis is very unfavourable; in no case, however, should efforts be relaxed until the last.

There is often uncertainty as to the kind of snake, its condition, and the extent to which its fangs were used. The great shock of depression which follows a snake bite may be in a measure due to fright, and will, on reassurance, pass away. The marks of two well-defined punctures attest the insertion of two fangs, and if the snake has not been seen, may enable one to form an opinion as to its character. Many of the innocuous snakes are fierce, and bite vigorously, but their numerous teeth leave different marks to those of the poison fangs.

There are exceptions to this rule; a few innocent snakes have the anterior maxillary teeth developed like poison fangs, but bites from them are not very likely to occur.

In a brief notice of this kind it is not possible to enter into much detail, but it may be well to note some of the characters that distinguish the venomous snakes. The form and arrangement of their teeth, and an examination of the mouth, will always reveal the true character. On opening the mouth of a venomous colubrine snake, such as naja or bungarus, two well-developed fangs will be observed, one on either side, and close behind it there may be seen one or two smaller teeth; there is no row of teeth along the outer side of the mouth, but a double row will be found on the palatine surface.

In the viperine and crotaline snakes, a large fang will be found on either side, and a double palatine row. There are no small fixed teeth behind the fangs as in colubrines, but in a fold of mucous membrane at the base of the fangs, both in vipers and colubrines, a set of loose reserve fangs will be found.

In Hydrophidæ the fangs are arranged like those of the cobra, but are very minute, and no reliance can be placed

on any mark made by them. The circumstances under which a bite is inflicted will generally help to indicate the kind of snake.

Harmless snakes have a double row of equal
or nearly equal sized teeth in the maxillary
and palatine bones. There are certain inno-
cent colubrine snakes that have long anterior
maxillary teeth that might cause doubt as to
the nature of the bite, but such are very ex-
ceptional.

There is nothing (except the hood in Na-
jadæ) in colubrine snakes peculiarly characteristic, in their
general aspect, of their venomous character; at first sight
for ordinary observers it is difficult to say whether they are
poisonous or not. Indeed, several of the innocent have a
more repulsive aspect than poisonous species.

(To be concluded.)

Meeting of Dentists in Birmingham.

ON Saturday afternoon, the 8th inst., a meeting of dentists was held at the Queen's Hotel, Birmingham. On the motion of Mr. W. J. Watson of Birmingham, seconded by Mr. R. Hopkinson of Manchester, Mr. Charles Sims, L.D.S., was voted to the chair. There were also present, Messrs. Sydney Wormald, Stockport; John O'Duffy, Dublin; Richard Rogers, Cheltenham; John Laws, Bolton; Richard Hopkinson, Manchester; Wm. J. Watson, Birmingham; David A. Wormald, Bury; J. Ross Watt, Leamington; W. H. Waite, Liverpool; R. King, Shrewsbury; W. H. Bremard Neale, Birmingham; E. Cottam, Oswestry; Richard Owen, Wolverhampton; L. Harding, Birmingham; F. F. Apperson, J. Williams, L.D.S., Walsall; and J. E. Murphy, Derby.

At the commencement of the proceedings, Mr. Richard Rogers (one of the Hon. Secs.) read the following letter from Mr. John Tomes:—

Upwood Gorse,
Caterham Valley, Surrey.
August 23rd, 1877.

DEAR SIR,—When the subject was mentioned by Mr. Sims, I quite understood that the contemplated meeting at Birmingham would be a gathering of the dental practitioners of Birmingham and its neighbourhood, a meeting in Warwickshire of Warwickshire dentists, for the

purpose of encouraging the general and comprehensive education movement in which we are engaged. From your letter I see that the meeting has a limited purpose only, and one which would gain nothing by my presence. My sympathies are with the movement as a whole. I must beg, therefore, you will allow me—through you—to decline the kind invitation of the Dental Diploma Committee to take the Chair at the meeting to be held on September the 8th.

I remain yours truly,

J. LAW, Esq.

JOHN TOMES.

Letters of apology were also received from Messrs. Adams Parker, Birmingham; Robert J. Surman, Worcester; Thomas de Lessert, Wolverhampton; J. Hind, Coventry; G. Butler, Darlaston; Norman King, Exeter; J. Higham, Northampton; E. Williams, Croydon; T. Murphy, Bolton; J. Kelly, Manchester; G. Brunton, Leeds; E. Pierrepont, Manchester; J. Harrison, Sheffield; W. R. Wood, Brighton; D. W. Amore, Hastings, all of whom expressed hearty sympathy with the object of the Committee.

The CHAIRMAN then said: Well, gentlemen, allow me first of all to thank you for the honour you have done me in asking me to preside over this meeting. I feel certain that the objects which we have in view can only be met by unity on our part, and I should like to suggest to the gentlemen here that there are many of our friends who are a little backward in their interest in these matters. We want to have them here, if possible, that they may know what is going on. I find many people who take in the Dental journals ignorant of what is going on as regards our meetings. I have on several occasions had communications from gentlemen who did not know what we were doing. But when the object for which these meetings are called becomes better known, no doubt there will be less lukewarmness shewn than at present. I should have been better pleased if I had seen more of my own townsmen here; but I suppose they prefer going to meetings held far away than to one held in their own town. I hope that on some future occasion they will not be found so lukewarm as at present. I think they do not know much about us or they would give us their presence. So far as I am concerned I wish the Committee every possible success. The part they are taking is a very desirable one—desirable in various ways. Many of the gentlemen who are moving in the matter had

not the opportunity that many dentists had in 1859, and there are a great many who regret they did not take advantage of the opportunity then afforded. At the present time we are divided into two bodies, the qualified and the unqualified; and there are among us many gentlemen whom—with all due respect to them—we wish had availed themselves of the opportunity. Of course it is impossible for a man to leave his practice and go through an entire curriculum to obtain the "L.D.S." The primary object now in view is, that the College of Surgeons of Ireland should open their doors on the same conditions as the College of Surgeons of London did without requiring a dentist to go through the full curriculum. I think the better plan would be to leave it entirely to the College of Surgeons of Ireland to make their own arrangements as to what form the examinations for the diploma shall take. I think you will find they will give you an examination quite as difficult as in England. If you can find a sufficient number of gentlemen, who are honest practitioners, who can show to the College proper certificates as to the way they conducted their practice, I feel sure that what you are aiming at will be obtained, and that the College of Surgeons will open their gates, and you will get all you ask. With regard to Mr. Tomes' letter, I also have received a letter from him in which he spoke heartily of the movement, and I am sure that had he been here he would have been pleased to have taken the chair, but he is so connected with the dental reform movement that he thought it better not to mix the two. I wish you every possible success, I have no doubt that there are gentlemen, who will speak afterwards, who will tell you what has been done.

Mr. WATSON proposed that "we hail with satisfaction the efforts that are being made by the Dentists of Ireland to induce the Council of the Royal College of Surgeons of Ireland to institute a Dental Diploma, and we pledge ourselves to give them our cordial support." He said: I feel quite sure that everyone here will give this resolution his cordial support, and we, as dentists of this neighbourhood, hope the movement will be successful. We all know the difficulties which those in practice have to contend with in obtaining a diploma. It is impossible for them to leave their practice, if they have commenced, to go to London to attend lectures for two years. It is impossible for a

dentist living in this neighbourhood to attend the proper number of lectures before he can undertake an examination. I felt it severely four or five years ago. I paid my fees, and attended college and hospital for some time, but I found it would be absolutely necessary for me to leave my practice and go to London. Therefore we hope that the movement of this committee will be successful, and that the College of Surgeons in Ireland will open their doors. We do not ask for an easy examination; I hope it will be one we shall be proud of. I hope no one will mind working for it; and most of us, though we may be very good dentists, would require some little preparation for going through an examination. I am sure we shall all do our best to prepare ourselves. With regard to the Dental Reform Committee, I trust they will never think we are acting in opposition. I think the movement of this Committee will lighten the work of the Dental Reform Committee; because if out of 1,200 or 1,500 dentists you can, through this movement, get three or four hundred to pass the examination, and obtain a diploma, you will leave so many the less to legislate for, and the smaller the number you have, the less work you will have to do. There are many interests to deal with. There are men who have been in practice forty or fifty years. This, and other things must be taken into consideration. I have no doubt you will welcome the opening of the College in Ireland whatever stipulation they may impose, and the dentists of this country and of Ireland will, I feel certain, present themselves in such numbers as to convince the authorities that they have taken a step in the right direction.

Mr. ROFF KING, Shrewsbury, seconded the resolution. He said: I am quite satisfied that English dentists do hear with satisfaction of the efforts our Irish brethren are making on their own behalf and ours. I think there is a great deal of stand-offedness—if I may use the term—a great deal of estrangement between dentists which ought not to exist. There ought to be a kind of brotherhood, a kind of freemasonry among us, which would assist us in finding out the minds of each and every one, so that by means of combined action we might be able to carry our point. Undoubtedly we have not been used altogether well by the Royal College of Surgeons, in the fact of their

having closed their doors so suddenly. I was one of those unfortunate individuals. I don't suppose there were many of us who were reading for this diploma, and that any were under twenty-one years of age. I was reading, and when the doors were suddenly closed, was left out in the cold. I went into practice, and have been in practice ever since, and I don't think it would be worth my while to leave my practice now for two years to obtain a diploma; I have made my practice, and I don't think a diploma would do much good. At the same time if a diploma could be obtained on reasonable terms, I should be among the applicants. But I trust that power will be retained by the licensing body or college to check advertising, and put down the scandalous habit which has brought our profession into the greatest contempt, and which would especially bring discredit and disgrace upon a member of the profession holding a license. I need not dwell on the stupidity, the vulgar, low mind, which must give birth to such a mean way of getting a practice. (The speaker read from two newspapers the advertisements of certain dentists, one of them a Licentiate, and proceeded:)—I hope that when this diploma question is gone into, the Irish College of Surgeons will reserve to themselves some power by which they can punish such villany as this. Although you have not a large attendance here, I think the feeling of dentists generally is entirely with you. When I received the circular calling me to attend the Manchester meeting, I fully intended to go, but at the last moment was prevented. There are some who stay away from diffidence; some from lukewarmness; but when they see the inestimable benefit they may reap from having a diploma, and from being able to send their sons to the best school, I am sure you will find that they will all be with you. One of your secretaries says that of the letters he has received, not one is in opposition to the object we have in view. I second the resolution with cordiality, and shall be happy to render all the assistance that lies in my power.

Mr. W. H. B. NEALE, Birmingham, said: As the youngest member of the profession present I desire to say a few words on this resolution. I commenced practice here some years ago, but failed to take a degree. The reason I failed was want of time and money. Many, I have no doubt, would be able to go to London and take residence;

but when I left Cheltenham I had not time enough to attend the lectures, and to do sufficient work to get the fees. There are only three or four gentlemen in Birmingham who have the degree of "L.D.S." Mr. Sims, I think, we may consider as really representing the profession in Birmingham. He is always ready to receive any and every individual who has any interest in the profession; it does not matter whether that individual is L.D.S., M.R.C.S., or nothing at all; if he has the interest of the profession at heart, Mr. Sims does all he can for him. I am sure that there are many Birmingham dentists, besides those who are here, who have this matter at heart. If the meeting had been advertised there would have been more here, but many persons who receive circulars take little or no notice of them. I know one gentleman who received a circular and did not read it. If the College of Surgeons of Ireland would grant diplomas as we desire, I should be pleased to take one, and I hope the examination will not be different or inferior to that of the College of Surgeons of London.

Dr. WORMALD, Bury, said: I have certainly listened with very great pleasure to what has been said by the previous speakers. I am sure that although we could not expect that a meeting such as this, called at a moment's notice, would draw a great attendance, still I do think that the interest already shown by those who are present, and the friendly feeling displayed, are encouraging, and we may trust that the movement will go forward, and that our cause will be successful. There are members of the Committee who have come here from a great distance to attend this meeting, because their hearts are in the work. We cannot shut our eyes to the fact that as matters are now a qualification is requisite. It is no use looking to the past. It is evident that a change is coming over the scene. Whatever the past may have been; whether we are young or old, the public know that a qualification does exist. A great body of those dentists who hold no qualification are now disposed, and are anxious that the college gates should be thrown open to them; and they are willing to make the sacrifice of time and labour necessary to obtain the diploma. I am sure that we, as individuals, feel the necessity of a qualification. It does not need talking about. All people may not know the difficul-

ties by which we are surrounded, and the hard work that is necessary when a practitioner endeavours to conduct a respectable practice, and especially when it is known that a diploma is merely an honorary qualification. We want to bring within the reach of a body of men (already in a position which no diploma can take away) power to obtain a diploma—men who would, at the same time, bring credit to that diploma, and make it regarded by the public as a qualification for dentists. Under the present position of affairs I know men possessing the “L.D.S.” who have been compelled to do those nefarious tricks which have been spoken of to-day, and have disgraced the diploma which they should have respected. I know members of the Odontological Society, who have the credit of respectability, who are having the very bread and butter taken away from them. It is said that “Virtue is its own reward;” but it is a long time coming. Students who turn out of hospitals are not wealthy men; how are they to live? They must live in some fashion, and if they cannot live respectably they will live the other way. If by supporting the Irish dentists, proper opportunities are afforded us of obtaining diplomas, and if we are willing to make the necessary sacrifices, then a young man will be stamped as a legitimate practitioner, and the public, looking at the great body of men holding the diploma, will say that they are the only legitimate dentists. But, now, the best of men must pull with the stream. We see a man endeavouring to uphold the dignity of his profession among men who care nothing for it. In some towns a man makes practice from the top of the tree almost to the bottom; and, as the fact remains that the public are not educated to believe that the profession requires a diploma, they go to the man who charges the lowest price. While this is going on money is going out of the pockets of respectable dentists, and the only remedy we can adopt is to serve a movement like this, meeting together and trying to rouse the interest of men who have made a position, so that if they do not require to do anything for themselves they will take action if only for the sake of the profession. We can do nothing as individuals; but, whatever may be said to the contrary, I think the members of this committee are actuated by the strongest desire to improve the profession. Although we may be spoken of in the *British*

Journal of Dental Science as "Paid agitators," we have the dignity of the profession at heart. The letter signed "An Old Correspondent" I regard as a slander upon the Committee who have given their time and their money to this cause; and yet an anonymous correspondent accused them of spending public money to secure private ends—a thing they would scorn to do. We want earnestness and work. Talk won't gain this movement. We must be prepared to induce our friends individually to support us. Then we shall make such a show to the College of Surgeons of Ireland as will convince them that we are in earnest in what we ask. There is a rhyme which says:—

"Honour and Shame from no conditions rise,
Act well thy part, there all the honour lies."

Be it ours to do our part, to do our little to make this movement successful; and if we have a general emulation among us, success will crown our efforts. I and others may not see the full measure of our reward, but we shall have the satisfaction of knowing that we have done our duty, so that our profession will be handed down to posterity a greater blessing to the country and to those who may follow in our footsteps. (Cheers.)

The resolution was then put to the meeting and carried unanimously.

Mr. LAWS (as one of the hon. secretaries to this Committee) said: the onus is laid upon me of explaining to you the course we are adopting in order to gain the object we have in view. I wish that the task had been put into abler hands than mine; but I have one consolation, viz., our cause is a good one, and one that must commend itself to you, consequently it is not dependent upon an eloquent advocate for its success. Our Committee, to begin with, laid it down as a fundamental principle that this movement should not be that of merely a certain clique or party, but should have a thoroughly broad and national basis; consequently it was decided to hold meetings of Dentists in different parts of the kingdom, so that the whole question might be thoroughly discussed and understood, and no one could say, as has been so often complained of in former movements, that they had not heard anything about it. This meeting is the result of that decision. Hitherto, gentlemen, London has always been held up to us as the very

paragon of fraternal love and good feeling amongst dentists. It is not my intention here to dispute this as far as the past is concerned, but for the future I am much inclined to think that London will have to be contented with merely the second place in this respect. I am pretty well acquainted with the past history of our profession, including Mr. Hill's latest addition to the same, but I have yet to learn that it has been placed upon record that London ever held four such hearty, fraternal, and unanimous meetings as have been held in the provinces by this Committee within the same number of months. Certainly, our Committee's campaign in this respect has been successful—even, I think I may say, beyond anticipation. Wherever we have gone we have met with a cordial reception, our object has been applauded, and we have been requested to continue our efforts. These efforts, gentlemen, we intend to continue. You cannot but agree with me, I think, in saying that the great curse of our profession in the past has been the lethargic and indifferent spirit displayed by its members in respect to anything that affected the profession outside their individual sphere. Each one has been content to jog along by himself, caring nothing for his brethren of the present, or the children of the future. It is high time that this lethargy was thrown off. It is needless to say there is no necessity for such uprising. We have wrongs to redress, we have insults to ward off, injustice has been done which must be undone. In the name of our committee, then, I ask you to-day to lend us your aid, and assist us to carry on this work. We are desirous of supporting our Irish brethren in founding their Dental Hospital and establishing a school of Dental Surgery in connection therewith, which will afford greater facilities for the obtaining of a Dental Diploma. That greater facilities are needed you all know. I look upon it as ridiculous that only one Dental School should exist for the whole United Kingdom, and that gentlemen learning their profession in Ireland or Scotland shall be compelled to spend two years in London, and go through the curriculum there, or be pointed at with the finger of scorn for ever as unqualified, or rather I should say, non-diplomaed, for the term unqualified I shall not accept. But this is not all, we are working in order to place facilities within the reach of all *reputable* members of the

profession already in practice to obtain this Dental Diploma. We have had it lately thrown in our teeth that we are endeavouring to sneak into the College by a back door. Gentlemen, I utterly repudiate the charge. We are not trying to do so. We are asking for no Diploma which we are not qualified to hold; for no reward which we do not merit. But what we do ask for is a fair and open field upon which each may prove that he is possessed of a sufficient knowledge of dentistry by which he may carry on his practice in the future as in the past, with justice to his patients and credit to himself. It is foolish to say that we have no grievance, whilst the only means by which a qualification can be obtained by existing practitioners is so hedged about with hindrances, not to mention insults, as to prove a perfect barrier to three-fourths of our profession. It is not, gentlemen, that we consider that the possession of this diploma will make us any better dentists; five hundred diplomas could not do that, for it is a matter of purely individual attainment; but it will remove that state of things at present existing by which we are, on the one hand, classed with a set of men famous only for their ignorance and impudence, and on the other hand, looked down upon by a few who, having lived in London and obtained the diploma, claim to be the only dentists, but whose work is not one whit superior to our own, and sometimes not even equal. Charity, it is said, must begin at home; certainly in Dental matters London charity did begin at home, and it took good care to end there. The poet says, "we must learn to labour and to wait." I think, gentlemen, we have reversed that order of things—we have waited first, and without result, we must now labour, and do for ourselves what others will not do for us, however great their pretensions may be. This then, gentlemen, is the programme which this committee has as yet mapped out for itself. That there is no small amount of work to perform you can see. That we have willing hands to perform it I can guarantee. That we shall meet with opposition we have already abundant evidence; but if a thing is worth having it is worth working for, it is worth striving for, it is worth proving it is right even to our foes, if can be. I ask you, gentlemen, is this work worthy of your support? if so, then give us every encouragement

in your power. Help us with your name; help us with your influence, help us with your purse, for we shall need all, and success will crown our efforts, and Dentistry, the profession we love, will take its proper position amongst the highest professions in the land. (Cheers.)

Mr. J. R. WATT, Leamington: I think the resolution I have been asked to submit to you deserves the hearty vote of all who are present. There is no doubt that a monopoly, of whatever kind, is always bad. If it is a monopoly in granting degrees, that is also bad. The distance that people have to travel, and the time that has to be spent to obtain a diploma are such, under present circumstances, as to render it impossible to obtain the diploma. I was pleased to hear Mr. Laws object to the term "unqualified dentist." I should like to know who were the unqualified before the diploma was issued? Were they not those who had served an apprenticeship to a competent practitioner, and were there not among them those who had practised ten or twenty years? I think the fact that they have good practice shows that they are competent men, for otherwise they would not have that practice. The resolution I have to propose is as follows:—"That this meeting has heard with satisfaction the statement of the Committee appointed at the meeting of dentists held in Manchester on May 12th, and pledges itself to support that Committee in the course which it has adopted." There is no doubt that if the College of Surgeons of Ireland grant diplomas there will be a large number of applicants for it, and the greater the number by whom it is held, the greater value will the public place upon its possession.

Mr. NEALE, in seconding the resolution, said: Mr. Sims has observed that many people do not take in the *Dental Journal*, and he wishes us to see that all persons who do not take it should do so. I may say that we are not all bound up in it, or it with ourselves, as we should be. We don't seem to run in the same straight line. Whether we shall change and go round to their way of thinking, or whether they will change and come round to ours, I don't know; but if there is not unity among ourselves the Colleges of Dublin or Edinburgh will not see their way to institute a diploma. A great many people did take the diploma of the London College when it was open, but

now there is no diploma which all reputable dentists can obtain. Mr. Williams, of Walsall, who is here to-day, has taken a diploma, having attended the necessary lectures, but he is an exception. We must have some college to which every respectable member of the profession can be admitted. I think the great thing is that everybody here, and all over the country should join with us at once, and not relax their efforts until this movement has been carried to a successful issue.

Dr. W. H. WAITE (Liverpool) said, the following letter was sent to me last Thursday, coupled with a request that I would read it aloud at the Birmingham meeting. The writer is an old-established and well-known provincial practitioner, of high repute and considerable experience, and I am sure that he is the exponent of views which are very extensively shared by country brethren:—

September, 1877.

DEAR SIR,—At a juncture like the present, when anarchy reigns supreme in our profession, and a revolution appears to be imminent, I have thought it might be a satisfaction to those who are engaged so zealously in the cause of dental emancipation to know what are the feelings and opinions of those who, like myself, are prevented by one cause or another from taking a more active part in the struggle. Speaking for myself, it appears to me quite evident, from the regretful allusions to the College of Dentists made at recent meetings, that its suppression in favour of the present abortive, dependent, and in every way undignified connexion with the Royal College of Surgeons, is regarded by many as a great misfortune, since it is clear that we have signed away our liberty to a corporation which in the first instance wished to have nothing to do with us, and that only yielded at last to the importunities of those who could not realise the fact that London is not England, nor the London dentists the Dental profession.

Had the College of Dentists been maintained, does any one imagine that, after eighteen years existence, it would only have shown the barren results of the present diplomas which have recently been made public, and are at present unrefuted? On the contrary, the only unqualified men the profession would possess at the present time would be those who were too ignorant to pass an examination, and the persistent advertisers, who would not be allowed to present themselves. And what more than this is required by the profession or the public? And why to please a few London dentists, who can write M.R.C.S. after their names, are we who form the bulk of the profession to be so cruelly sacrificed as we are? We have suffered long and patiently, and we have hoped against hope, till our patience is exhausted, and our hope died out. Who, then, shall venture to blame us because we dare to think that this intolerable state of things has existed long enough, and because we have the audacity to proclaim that from henceforth the only laws we will recognise in the profession are ENGLISH laws, the fundamental principle of which is

“The greatest good for the greatest number.”

We are strong enough to resuscitate the College, which ought never to have died; but we hate antagonism, and are willing to make the best of the present arrangement, provided we are met in a generous, conciliatory spirit, and a disposition to render justice, tardy though it be. We ask for a general amnesty for every man who is now, and for a specified time has been, conducting his practice in a professional manner, and the right to present himself for examination. Until this is done, the Dental diploma as at present granted is less a certificate of professional ability than of respectability.

Let us then be up and doing
With a heart for any fate,
Still advancing, still pursuing,
Learn to labor, NOT to wait.

And let no man lay down his arms till the "Little Charter" of 1859 is swept away by the full and complete "Magna Charta" of 1878.

I remain,

UNQUALIFIED DUST.

During the past three weeks, I have had the honour to receive quite a number of letters from brethren in various parts of the country, all approving of our movement, and most of them enquiring for information on certain points. It has been impossible for me to answer their letters so fully as I could desire, and I propose therefore to embody in the few remarks I have to make, as much of the information asked for, as I may be able. In pursuance of this plan I wish to say a word or two about Mr. Fox's "Registration Scheme," and its relation to the movement in which we are specially interested. First as to the history of the "Scheme." I believe it was mooted in the "British Journal," some six or seven years ago. Whether it would ever have come to anything one cannot say, but this is certain, that the chief credit of providing a practical means for putting it forward, belongs to our friend Sidney Wormald, and his colleagues, who got together the Manchester meeting of August, 1875. The success and enthusiasm of that meeting gave the "Scheme" an impetus, which otherwise it would probably never have obtained. That meeting authorised Mr. Fox to take steps for the formation of a Committee to carry out the "Scheme," and after a period of two year's incubation, that Committee has at length got seriously to work.

Now let us see as clearly as possible what this "Scheme," means. It consists of two parts. First the formation of a "Register" or "List of all those who practise Dentistry in any form whatever, on a given date. I suppose the "Register" will be opened in London, and every practitioner in the United Kingdom will be invited to send his name.

and address, for entry therein. That is the first part of the "Scheme." The second portion provides for the "Compulsory education" of every one, who may enter upon the practice of Dentistry, after the given date. By "Compulsory education," I suppose we are to understand the curriculum of the L. D. S. either in London, or Edinburgh, or Dublin. That is the second part of the "Scheme." Taken as a whole, there can be no question whatever as to its urgent desirability; no question whatever as to its claim upon the support of every man amongst us who desires to see our profession raised to a higher standard: no question whatever as to the ultimate effect it will have in securing to the public a guarantee of sound training, and adequate testing, for all who in future may offer their services as Dental Surgeons. I had the honour to support the inauguration of this "Scheme" at the Manchester meeting, and shall continue to support it as I may be able, until it is fully accomplished. More than that, I would urge every practitioner in the county to support it heartily and liberally. Having said this much, I take the liberty to point out in the next place wherein it may be considered inadequate as a "scheme" of Dental Reform. First as to the Register, or list of those in practice. The only value of this list will be, that it may serve as evidence in case of dispute as to the time at which any man commenced: *e.g.*, suppose the "list" to bear date January 1st, 1880, and suppose that some one commences practice in June, 1880, without having gone through the curriculum, no one could interfere with him unless it could be proved that he was *not* in practice on the 1st of January; the "list" would be evidence. This is its only value. It fixes a date, after which a further influx of incompetent and uneducated men will be illegal. It *fixes a date*, after which the value of a qualification will increase year by year, but it confers no advantage whatever upon him who is unqualified. It leaves him where it finds him, exposed to the rivalry of ignorant and unscrupulous pretention, without any distinctive mark. Second, as to "compulsory education." In itself an excellent thing for the public, and ultimately for the profession, its only effect on the unqualified man will be to put him, year by year, at still greater disadvantages, by forcing him into increasing and inevitable competition with freshly educated and qualified men. This is,

to my mind, so clear a case, that I marvel how any unqualified dentist, who has a spark of ambition, can be content with his present and prospective position. Herein, therefore, lies the inadequacy of the "Registration Scheme" as a measure of Dental Reform, viz., that its benefits are all *in futuro*. Its "blessings will brighten" only in the ratio in which existing practitioners "take their flight." It contains no provision whatever for the mass of respectable men who hold no diploma; and here let me tell you it was the realization of this defect that led to the holding of the Manchester meeting of May, 1876, for the purpose, as you are aware, of asking the Dental Reform Committee to include in their scheme some provision for the diploma difficulty. The object of that meeting was frustrated by opposition originating in London, and carried through by gentlemen who obtained the qualification by grace (it was not very *graceful* on their part), and in consequence of the indifference exhibited towards our wishes, we determined to take the matter up for ourselves. "Now, gentlemen, I have gone thus briefly into this question because we have been accused of "hindering" the "Registration Scheme," and I want all our unqualified brethren, clearly to understand where this Diploma movement is in regard to it. There are no men in England, Ireland, or Scotland this day, more hearty, more earnest, or more liberal, in support of the "Registration Scheme" than the men who compose the "Diploma Committee." But, our difference is this—"Registration and Compulsory Education" offers the profession "half a loaf." Well, we had rather "half a loaf" than "no bread," but, why should we not have a whole loaf while we're about it, and especially with all the faculties within our reach? Why should we not have a thoroughly liberal, and complete measure of reform? Why should the 1,000 unqualified provincials who constitute the bone and sinew of the profession, be put on one side, as unworthy of consideration, while the Reform Committee adjusts the privileges and prerogatives of those who belong to another profession? Gentlemen, it has been our own fault—it is our own fault—it will be our own fault—if we allow ourselves to be ignored. Let us have "Registration and Compulsory Education" by all possible means, the sooner the better; at the same time let us have such an increase of faculties for obtaining a recognised qualification,

as will place every educated and respectable practitioner of our speciality upon the same platform before the public, and distinctly separate him from the uneducated charlatan. Passing to the resolution, permit me to say a word or two as to our plan. When it was resolved to commence this movement, the question arose, where should we look for a dental qualification? The College of Surgeons in London had, by its restrictive terms, practically shut its doors on us, and our friends in London—who alone have any influence with the College—showed no disposition to employ it for our advantage. There remained, therefore, only two ways of answering the question, viz., an appeal to the licensing bodies of Dublin and Edinburgh to issue a dental qualification upon such terms as would be available for every respectable practitioner, or the formation of a distinct and separate body which should establish its own college, and confer its own qualification. Our Committee adopted the former course, and for this reason: they wished to avoid, if possible, the responsibility of dividing the profession into two parties. They felt that if the Colleges of Dublin and Edinburgh were willing to meet the requirements of the case in a reasonable and liberal spirit, the claims of the unqualified might be disposed of in that way without more ado. While thus resolving, however, and while using every effort for the accomplishment of this plan, we are by no means fettered as to the future. Speaking as an individual, I have lived long enough to know that the most illiberal man going is the man who wants *his* way of thinking adopted, to the prejudice of other people's way; moreover, I can see several cogent reasons for endeavouring to secure our object in such a manner as will avoid disruption and confusion. Still it must not be forgotten, that the provision of increased facilities for obtaining a qualification is the *prima* consideration, and that the mere *modus operandi* is a subordinate matter. Those who are acquainted with the history of legislation in the British Parliament, know that there are three stages through which every measure, tending to Reform, has to pass. First, it is contemptuously ignored; secondly, it is roundly abused; last of all, it is gladly accepted. Gentlemen, this Diploma movement is already in its second stage, but while abused in the quarter from which it should have had the greatest encouragement, the

zeal of our Northern brethren has been fired, and progress may be more rapid than some of us imagine. Our friends in Edinburgh are leaving no stone unturned to secure a successful meeting there on October 6th; it is already beyond a doubt that we shall have the best gathering of our profession yet known outside London. No strife with monopoly ever escaped untarnished by some acrimony or bitterness. With ourselves, as with all who contend for a liberal and true principle, opposition of any kind only serves to brace our nerves and impart tenacity to our muscles. Enemies may sneer, or friends may flatter, we have a cause to maintain, a victory to win, in behalf of a thousand unqualified brethren, and we shall not swerve from our purpose until it is attained. (Hear, hear.)

Mr. SYDNEY WORMALD, Stockport, desired to express the pleasure he felt in attending a meeting in Birmingham. It has given me great satisfaction to listen to the hearty speeches which have already been given. Were I to remain silent after listening to the very able address just delivered by Dr. Waite on the most interesting and important question that has ever been brought before the profession, and one which is now occupying the minds of our leading brethren through the United Kingdom, I should feel myself wanting in my duty, and indifferent to the advancement of Dental reform. Dr. Waite has very clearly pointed out that registration and compulsory education is a great and all-important question to the Dental profession, the accomplishment of which will be the starting point for the profession to gradually rise to a more respectable and elevated position. He has also very clearly demonstrated how indispensable it is, that the great body of the profession who are now practising under the yoke of dissatisfaction should be united for the purpose of adopting means by which they may obtain a recognised position, and thus more decidedly elevate the profession, and assist the obtainment of the registration scheme. I believe the efforts now being made by the Dental Diploma Committee to unite and elevate the profession are not only quite compatible with the registration scheme, but calculated to render the greatest assistance to it, because we aim at obtaining those means by which a more immediate and satisfactory unity may be secured, which registration alone fails to do. I will revert to the time when Mr. Fox

introduced his scheme of Registration and Compulsory Education in the year 1871, to the Odontological Society, which, I need not tell you, in those dark ages our brethren were not sufficiently enlightened to see their way to accept. They did not venture to spring and leap in the dark, therefore, the scheme was thrown out of the House, and allowed to slumber from 1871 till 1875, but during those long dark years, the spirit and elements of dissatisfaction were at work. The pen was vigorously applied, casting here and there to ascertain opinions, &c., and were I to relate to you the tale of apathy and indifference, you would not wonder at the present miserable position of our profession. After much writing, and canvassing, an effort was made to burst open the gates of apathy, by issuing a circular to the profession calling attention to the unsatisfactory state of the profession &c., the response to which was most encouraging, the primary object being to form a local association in Manchester, for the purpose of adopting means to unite the profession, and to take into consideration the question of elevating the profession by obtaining a recognised position. A circular was issued announcing a meeting to be held on the 31st of August 1875, at the Clarence Hotel, Manchester, and knowing Mr. Fox to have done so much for dental reform and that he was a power in himself, I telegraphed him, asking him to preside. His acceptance stamped the meeting with success, and the honour he conferred upon the whole profession on that occasion will never be fully appreciated, the profession owes to him a debt which yet remains to be paid. He arrived at Stockport at 6 o'clock on Saturday morning, previous to Tuesday, the day of the meeting, anxious to ascertain full particulars as to the object and purpose of the meeting, which was freely given. Mr. Fox then unfolded his scheme of registration and compulsory education, which had been slumbering four years, and it was decided that the object of the meeting should take that form, which was unanimously accepted by the meeting. Mr. Fox at once carried the whole affair to London, where a Committee of gentlemen was formed, supposed to represent the whole profession. Now, gentlemen, I need not tell you there are those on that Committee who hold a strong opinion that an effort ought to be made, either by or in conjunction with that Committee, to remove the yoke

of dissatisfaction which exists amongst our 1,000 unqualified practitioners. Suggestions have been made but have not been accepted. Therefore a separate Committee has been formed with a view to assist and to do that work which is deemed equally essential for the good of the profession.

Unity is strength; if we are united we shall accomplish our object. Then the gates of registration will be closed, and compulsory education will be the dental high way for the future, and those now in the ranks of the 1000 unqualified who are anxious to redeem the past by aspiring through the merits of their education and professional position to obtain a diploma, may have the privilege to do so.

There are gentlemen on those committees who have laboured long and hard for the success of registration and compulsory education, and to obtain means by which the whole body may obtain a recognised position. They have not spared time or money; they have at their own expense, travelled long distances to attend all committee and other meetings, with a determined purpose for the good of the whole profession. Yet these gentlemen are stigmatized in the *British Journal of Dental Science*, as "paid agitators," and put down amongst "the refuse of the English College." Yet those who were the means of awakening the slumbering scheme of registration are denounced as a "hindrance" to its success. Gentlemen, this abuse will not retard our efforts, but rather will it stimulate us all to greater exertions in time to come. I have great pleasure in supporting the resolution. The resolution was put and carried.

Mr. ROGERS, Cheltenham, said: Having been taking a holiday for a month, I spent three weeks in Ireland, where I called upon several members of my profession to learn their views in regard to our movement. Though some seemed indifferent they all gave us their sympathy, and promised to support us. It was my privilege to see some of the council of the Royal College of Surgeons of Ireland, who promised to support us. They would do all they possibly could, and would hail with great satisfaction the day when a Dental Diploma would be given from the Royal College of Surgeons in Dublin. I am not an orator, but there is not a greater fighter or more determined

worker on the Committee. I have attended every meeting but one that has been called, and if a meeting were held in Nova Scotia I would be present. We are determined to succeed, and we have young blood among us which will never rest until we have gained our cause.

MR. SYDNEY WORMALD: I have made it my business in a visit to Ireland to ascertain the views of the leading practitioners in Dublin. So far as we, Mr. Rogers and myself, could ascertain, we had every cause for satisfaction. We went to the Dental Hospital, which is situated in a prominent and beautiful position. We went on a morning appointed for Mr. O'Duffy, who visits there two mornings a week. We found fourteen patients waiting, some requiring regulation of teeth, some extraction. Mr. Rogers and myself had the honour of operating in extracting. We were very pleased with our visit and our reception by our brethren in Dublin. I may tell you that we had the pleasure of a visit from Mr. Longford, the treasurer of the Hospital, and as I am the treasurer of the Diploma Committee, we fraternised. They treated us like princes, and we might have been enjoying ourselves there now if we had been able to stay.

DR. WORMALD: I have great pleasure in moving a vote of thanks to Mr. Sims for his services to-day. I am sure he has given the honest expression of his own opinion, and I am sure the other gentlemen present have done the same. As some of the members of the committee have come 100 or 200 miles to attend this meeting for no other purpose than to do good, I will propose that a vote of thanks be given to them also, as well as to Mr. Sims for his able and efficient services in the chair.

MR. WATSON: I beg to second the resolution. I think we, as members of the profession in this neighbourhood, should not allow the opportunity to pass without thanking the gentlemen of the Committee for their attendance to-day, and we all know from what we have seen and heard that their hearts are in the work. They travel long distances, and we must know that they spend large sums of money in doing what they can, more for our good than for their own. We express our sympathy with them in the painful position in which they were placed by the letter referred to. I am sure the gentlemen of the profession in the Midland Counties have full confidence in the

Committee, and believe they are fully competent to carry out the movement they have undertaken. We feel proud to have such gentlemen working in our behalf.

The resolution was carried unanimously.

The CHAIRMAN: I can only thank you for your kindness, and I am very pleased that this meeting has been so unanimous. I must also express my thanks to the gentlemen who have so kindly come forward on the invitation of the Committee.

The proceedings then terminated.

Dental Exostosis.

THIS affection, which it is almost impossible to diagnose with certainty, is doubtless frequently the unsuspected cause of severe and protracted neuralgia, though, *en passant*, I may be allowed to say that I have seldom met with it except in connection with what may be termed a peculiar diathesis. Neither does there seem to be any treatment efficient to prevent the troublesome hypertrophy, nor remedy when it has taken place, except in the extraction of the afflicted tooth. Nor can we without danger of provoking tetanus replant such tooth. And yet, even the extraction of such a tooth will sometimes give us more trouble than we willingly assume, and, worse still, result in even greater discomfort to the patient than was experienced from its presence.

I have recently had a case which puzzled me very much. A stout, healthy-looking lady, of about fifty years of age, consulted me concerning a severe neuralgia of the right temporal region. She had been previously under my care, and I knew by experience the tendency in her case to dental exostosis, having extracted five roots from her, which were all hypertrophied. I found a cavity, slightly exposing the pulp, in the first right lower molar tooth, and hoping to have discovered the secret of her neuralgia, I applied the proper remedies to the exposed pulp; but the pain grew more and more distressing, and the patient begged that the tooth might be extracted. Desiring, if possible, to avoid this necessity, I urged patience, and proceeded to make applications to devitalize the pulp. But a constant sense of uneasiness about the parts suggested that the trouble was not yet reached. I drilled out the nerve-canals and syringed with a mixture of water, alcohol, and carbolic acid, and, loosely packing the canals and cavity with cotton saturated with carbolic acid, I dismissed the case until the following day. To my surprise the patient reported that she had suffered intense and constantly increasing pain throughout the night. The annoying sense of fullness still continued. I could detect nothing wrong. The gingival margins were healthy-looking and tight. The tooth was not sore. Pressure or the stroke of an instrument did not intensify the pain. The sense of fullness of which she complained and my previous experience in her case convinced me that the cause of her trouble was exostosis. I accordingly extracted the tooth. The operation was not a difficult one, and my diagnosis was confirmed by finding an exostosis of the anterior root, but.

no larger than half of a pea. I never heard anybody scream *after* the extraction of a tooth as did this woman. I examined the socket carefully, but not even the thin edge of the process was broken, and there was nothing to account for the excessive pain of which she complained. Having, therefore, applied a pledget of lint saturated with laudanum and chloroform, I dismissed the case. Early the next morning I was summoned to her bedside by the announcement that her friends thought her to be dying. The patient was screaming with pain and grasping hysterically a glass of ice-cold water, which she was taking into her mouth and spitting out again a little the fastest I ever saw done. I learned that she had spent the entire night in this manner. She could hardly stop screaming to answer me a question when the ice-water was out of her mouth, and could scarcely grant me a moment in which to insert medicaments. I tried chloroform, laudanum, acetate of morphia, until I became convinced that local applications were of no avail, and then resorted to a hypodermic injection of morphia, which put her to sleep. I ordered a tepid poultice on her cheek, to be kept constantly moist, and hoped the evaporation would lessen the determination to the parts. The next morning I found her at work at the ice-water almost as furiously as ever, and begging piteously for relief. I gave another hypodermic injection and ordered a blister behind the ear and one upon the nape. The third day, finding her but little, if any, better, I injected into the aveolus a few drops of a mixture of tincture of aconite and tincture of iodine, and packed the aveolus with lint moistened with carbolic acid. This treatment I repeated three times daily for two days, during which the pain was gradually diminishing, until it entirely ceased. The wound healed up very rapidly and the neuralgic pains entirely disappeared.

Now, what caused this severe suffering following the extraction? My theory is that the exostosis had made pressure upon the inferior dental nerve. My reason for reporting the case is the hope that some of my American professional brethren will be able to throw some light upon the subject.—VORSLUND KJÆR, *Copenhagen, Denmark.*—*Dental Cosmos.*

Epithelioma of the Lips and Face.

PROFESSOR BUSCH, of Bonn, had had about fifty cases of this disease under his care. He adopted the theory of Thiersch, according to which the development of epithelial cancer depends on a disturbance of the balance between the epidermis and the connective tissue. Most cases of epithelioma occurred on the face and lips. The disease always had its origin in a thickening, hard on the surface, and growing downwards, the commencement of which was often overlooked. In chronic cases on the face there was often at first only a horny layer; and, if this were rubbed off, a bleeding surface were left. If it were carefully removed, processes were seen to pass from it into the skin. The surface of the skin beneath was covered with a small layer of epidermis, perforated by the projections just mentioned. This condition was not yet cancer, but a rodent ulcer. The epithelial projection passed further inwards. In many cases there was evidently an irritant cause, often of chemical character. It was a question whether mechanical irritation, such as the

pressure of the heavy layer, was in any case the cause of the development of epithelioma. It was almost beyond doubt that eczema and other skin diseases were sometimes the commencement of epithelioma, as Sir James Paget had observed. If the heavy masses were loosened with a solution of soda, and the parts diligently washed with the same, the inward spread of the disease was averted, and the epidermis regained its normal character. This treatment was of course only successful in the early stage of the disease. Dr. Busch summed up as follows. 1. Epithelial cancer commences in many cases as a simple proliferation of the superficial epithelium. 2. In this stage, the disease is curable by persistent washing with solution of soda. 3. In certain favourable cases of superficial cancer of the face this method is successful, even when ulcers are present. 4. In many cases the recurrence of epithelial cancer after extirpation is prevented by alkaline washings of the cicatrix and adjacent parts. 5. It may be useful, as a prophylactic measure, to remove the epithelial deposits which sometimes take place on the breasts of elderly women.—*London Medical Record*.

Seguin on Maternal Impressions Affecting the Fœtus.

In the *Philadelphia Medical Times* of Dec. 23, 1876, Dr. E. Seguin relates eleven cases in which maternal impressions apparently caused deformity and arrest of development, or otherwise injure the fœtus.

1. An officer would always faint at the naked parlour sword. His father had all but killed his mother with such a weapon while she was carrying him.
2. A girl was idiotic; her six brothers and sisters very intelligent. The mother had been anxious about the father, who was at the wars.
3. Mrs. D. was no sooner pregnant than she took to drinking brandy; her boy was pearly white, myopic, and idiotic.
4. Mrs. B., after dancing at a ball, suckled her child while still overheated; it became idiotic and epileptic.
5. In a moment of anxiety, Mrs. C. jumped into a carriage with her suckling of 15 months so far healthy. She gave it the breast once during the journey, which made it sick, and after an acute fever, it became a cripple and idiotic.
6. Mrs. H. suckled one healthy child while pregnant with a second; it became hydrocephalic and idiotic.
7. The mother of blind Tom, a slave, used to look at a picture of a boy pounding drugs in a mortar: blind Tom used to stand in the attitude of the boy at the mortar, when at rest.
8. A pregnant woman longed for ham which was not given her: her girl was born with nævi on the back of her head and legs resembling ham.
9. Mrs. M. saw a man with no left hand. She exclaimed, "My child will be born with one hand," and so it was.
10. A pregnant woman had anxiety; her son was born an idiot.
11. Mrs. R., alone in a house one night, saw some one wrapped in a sheet for disguise trying to enter; she piled furniture against the door and repulsed him. Soon afterwards she gave birth to a healthy male child, which always awoke at the same hour and screamed as if in terror. He was severed from the breast of his mother, and was cured.—*London Medical Record*.

Correspondence.

We do not hold ourselves responsible for the views expressed by our Correspondents.

43, George Square, Edinburgh,
Sept. 3rd 1877.

TO THE EDITOR OF "THE MONTHLY REVIEW OF DENTAL SURGERY."

DEAR SIR,—The committee will feel indebted to you on finding a corner for enclosed circular in the first issue of your journal.

The leading members here and in the provinces have expressed themselves favorably to the conference. The committee *pro tem.* are Campbell, Dundee; Wilson, Macgregor, Matthew, Cormack and self, Edinburgh. Dr. Smith, Wemyss Place, will propose a scheme of examination and registration, which along with other matters will be discussed, and resolutions thereon passed, and a committee appointed to carry out whatever resolution may be come to by the meeting &c.

I am Dear Sir,

W. BOWMAN MACLEOD,
Hon. Sec., pro tem.

43, GEORGE SQUARE,
EDINBURGH, September 3rd, 1877.

DEAR SIR,

A CONFERENCE of DENTISTS will be held at Edinburgh, on *Saturday, the 6th day of October*, in the Rooms, 5, ST. ANDREW SQUARE,

"To consider the future position of the Dental Profession,
in regard to means of Education, in the event of the present
Registration movement being successful."

The various schemes of Dental Examination and Qualifications of late proposed will be discussed.

All interested in the welfare of their profession are respectfully requested to attend. The Chair will be taken at 3 P.M.

W. BOWMAN MACLEOD
Hon. Sec., pro tem.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

55, WIMPOLE STREET, W.

17th August, 1877.

DEAR SIR,—On page 108 of the *Monthly Review of Dental Surgery*, the therapeutic dose of 30 to 75 grains of iodide of potassium is marked with a note of interrogation. If this mark implies doubt if such quantities are useful, the writer may set his mind at rest, for I have known instances where

60 grain doses have failed to produce effect on a syphilitic affection, when an immediate doubling of the dose to 120 grains 3 times daily has set the patient going again favourably. I think that *à priori* no limit can be set to the dose that may be required and be useful. When small doses fail, large ones should be tried cautiously until the requisite quantity is discovered. The iodides of sodium and ammonium are more useful in the larger doses than the iodide of potassium, because they have, weight for weight, less alkali than the latter. Indeed, iodide of ammonium given in a mixture with excess of ammonia (sesquicarbonate) often has a magical effect when iodide of potassium fails, simply because, as I believe, a larger quantity of iodine is given in the dose.

I am, dear Sir, faithfully yours,

BERKELEY HILL.

TO THE EDITORS OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

Harvard University.

MESSRS. EDITORS,—A specimen letter, "one of many" I have usually burnt without answering them, but, as there can be no confidence in such an insulting epistle, I have thought that a little publicity might be of use in the matter. The letter is at your disposal.

Yours, &c.,

THOS. H. CHANDLER,

Dean H.D.S.

. Birmingham, England, May 28th, 1877.

DEAR SIR,—I am anxious to obtain a degree in Dental Surgery, but it would be quite impossible for me to come to America for the purpose. Will you kindly inform me whether your faculty would be willing to confer the D.M.D. either *honoris causu* or *ad eundem*?

I am, dear Sir, very truly yours,

L— T. C. P—, M.A.Ph.D., LL.D.,
Surgeon Dentist.

TO THE EDITOR OF "THE MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—The following announcement appears in the advertising pages of *Plain Talk*, a magazine circulating extensively among the Baptist denomination in Liverpool:—

PAINLESS DENTISTRY.—Mr. ———, L.D.S., R.C.S. (of London), Dental Diploma, Royal College of Surgeons, Surgical and Mechanical Dentist, ——— street, Liverpool.—Mr. ——— supplies Artificial Teeth, from a single tooth to a complete set, on the most moderate terms consistent with purity of material and durability in wear. Also the highest class work on platina and

18-carat gold plate. Perfect mastication and articulation secured with ease and comfort in wear. All the latest improvements, both English and American, including the suction plates. Painless extraction with nitrous oxide gas, at a very moderate fee. Stoppings in gold foil, gold amalgams, and white enamel. Misfits re-modelled and adapted with comfort to the mouth. Those requiring the services of a qualified Dentist are invited to send for Mr. ———'s, "Treatise on the Teeth and Painless Dentistry," which will be forwarded gratis. All charges strictly moderate, and satisfaction guaranteed. Consultations and all information free. 95, Mount Pleasant, opposite Rodney-street, Liverpool.

A similar one is to be found on the outside of the cover of the *Liverpool and District Congregational Magazine* for the month of August.

Of course no one *"will believe that this is the work of the gentleman whose name is made use of, but rather an unauthorised proceeding on the part of some advertising tradesman."*

Yours, &c.,
AN ADMIRER OF PHILANTHROPY.

Appointments.

Mr. Lawrence Bird to be House-Surgeon to the Dental Hospital of London.

Mr. Edward Fothergill to be Assistant House-Surgeon to the Dental Hospital of London.

LONDON DENTAL HOSPITAL.

CASES TREATED FROM AUG. 1ST TO AUG. 31ST, 1877.

Extractions.	Children under 14	...	...	...	526
	Adults	...	...	...	836
Under Nitrous Oxide	...	...	...	...	248
Gold Stoppings	...	...	...	...	105
White Foil ditto	...	...	...	...	16
Plastic ditto	...	...	...	...	371
Irregularities of the Teeth treated mechanically	...	...	...	...	44
Miscellaneous Cases	...	...	...	...	176
Advice Cases	...	...	...	...	59

Total 2381
JOHN ACKERY, *Dental House Surgeon,*
Pro tem.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of Messrs. SMITH, ELDER, & Co., 15, Waterloo Place, Pall Mall.

All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4, Crane Court, Fleet Street, E.C.

THE MONTHLY REVIEW

OF

DENTAL SURGERY.

No. V.

OCTOBER, 1877.

Vol. VI.

The Winter Session.

THE First of October was the opening day of the Winter Session of the Medical Schools. Introductory addresses were delivered at most of the Metropolitan Colleges, and our Dental Schools were also in consonance with the general and highly commendable usage.

The several Inaugural Addresses were necessarily upon varied subjects; and the topics alluded to by each lecturer were also of "divers natures." From the able lecture by Prof. Lister at King's College, who by the *Medical Examiner* was denominated "*par excellence* the apostle of the surgery of thought, and was standing as an authorised teacher in the stronghold of the surgery of action," and whose introductory address was "a scientific demonstration worthy of a learned society;" from the well tempered address delivered by Mrs. Garrett Anderson, M.D., at the London School of Medicine for Women, who directed her hearers to a higher ærial stratum above the 'undulations of "petty jealousies" and "everything which was opposed to comradeship," and to "seek in all things to promote the highest aims of the profession, and to add to its honour;" from one and all we can gather an abstract principle:—little is known, more is unknown.

The student who has just commenced his professional education, as well as his senior students and his teachers, has a wide field before him. The harvest of knowledge is

a long harvest; but each grain gathered into the barn of human intelligence carries its reward to the gleaner. The Dental Student in his sphere has a rich acre of virgin soil before him, and the golden grain awaits the reaper. It may be asked what is there to do? Our reply is, that the more an individual becomes acquainted with the phenomena of organic life, proportionately does he find the imperfections and relativity of our knowledge. Data are wanting in Morphology, in Physiology, in Homology, in Anatomy, in Histology, and in Embryology of the Teeth. By thus sub-dividing the subject we indicate lines of enquiry: and it will require little research into our present literature on any one of those sub-divisions to find a "missing link."

Though the London School of Dental Surgery was not on this occasion the theatre of a formal inaugural address, yet the students had some introductory remarks delivered to them by Mr. Turner, at the commencement of his Course of Lectures on Dental Mechanics. We regret being unable to present Mr. Turner's address before our readers; but he was understood to refer to the social and political position of the profession, and to assure the students that whatever the result of pending deliberations of reforms might be, the students' interests should be cared for and jealously guarded.

Turning to the address delivered by Mr. Samuel Lee Rymer to the students at the National Dental Hospital and College, which we publish in this number, we find an exposition of principles for the student, and a dissertation on "the position and prospects of the profession of Dental Surgery at the present time." His remarks to the students require from us no eulogy. Their commendation is self-contained. The observations upon the position of the profession, coming at this special time from such an one as Mr. Rymer, must carry an intrinsic force and significance which the reformers of 1877 will hail with satisfaction.

As Mr. Rymer observed, "It needs only to compare the chaotic state of the profession in 1855 with the organised arrangements of 1877, to prove that great results have been achieved." "I am satisfied we are on the right tack, but for crowning success one thing is imperatively called for, *i.e.*, *united action*. Whether we belong to this society or that society, whether we hold qualifications or otherwise, let us all sink minor differences, and unite in supporting the disinterested efforts of the Dental Reform Committee."

Each right-minded member of our profession has a work before him. Whether his energy be directed in the line of scientific research; or whether it be infused in the cause of political action, giving impetus to the movement, or acting in equilibrium; verily that energy will not be lost, but it will form a unit in the total power for good, as truly as there is a "soul of goodness in things evil."

The Conference in Edinburgh.

IN our last number we directed the attention of our readers to the forthcoming Conference of Dentists to be held in Edinburgh. To the embryonic Scotch Committee then formed we offered some recommendations and generalisations.

That some of the spirit of those abstract principles was comprehended, we need only compare the tone of the meeting held in Edinburgh on the 6th inst., with the general tone of the Manchester, Leeds, and Bristol meetings. The fact, as a correlative, is obvious, whatever may have been the cause.

The six resolutions carried at the Edinburgh meeting require for their successful issue energy and earnestness

on the part of the committee into whose care they have been trusted.

The suggestions submitted by Dr. Smith were a series of valuable recommendations, worthy of careful attention.

The time is yet far distant when the mechanical element of our profession will be separate and distinct from the surgical. Such a division, in its completeness, would result in something very much different from what we now understand as "Dentistry."

Much might be said about Dr. Smith's examination scheme; but we shall now only express our fear of its practicability in conjunction with the conjoint scheme, which doubtless will over-ride all other qualifications. Therefore the probable effects of the conjoint scheme, when legalised, ought now to be duly calculated.

It must be admitted that the meeting in Edinburgh was certainly the most influential, the most unanimous and vigorous of any similar meeting yet held; and no little of the success of the Conference was due to the self sacrifice, and noble mindedness, of the distinguished Chairman, Mr. John Tomes.

The Month.

NATIONAL DENTAL COLLEGE.

We are requested to state that Mr. Oakley Coles will deliver his course of lectures on Deformities of the Mouth during November and December at the National Dental College, and not in the months of February and March as previously announced.

REGISTRATION OF NEW STUDENTS.

From the 1st inst., up to the present time, 35 new Dental Students have registered at the College of Surgeons. This number includes those who have commenced their professional education since the 1st of May, 1877.

EXAMINATION FOR DENTAL DIPLOMA.

We understand that the next written and *vivâ voce* examinations for the Dental Diploma of the College of Surgeons, England, will take place respectively on the 26th and 30th of this month.

On the Forcible Removal of Teeth and their Replacement.

By G. J. WILLIAMS, L.D.S., R.C.S.

Lecturer on Dental Mechanics at the National Dental College, Dental Surgeon to the National Dental Hospital.

OF the varied form of cases that are presented for treatment by the Dental Surgeon, the forcible removal of teeth by accident is fortunately a rare one compared with the usual routine of daily practise. That they do come under our notice will be sufficient excuse for ventilating the subject, with a view of elucidating some opinion and treatment upon replacing the same in their sockets, and if advisable or not. We have heard of wealthy dames undergoing the barbarous operation of having their incisors extracted because of their ugliness, and rendered beautiful for ever by having others of a more beautiful form inserted—obtained from some needy plebeians—but the *modus operandi* is not recorded in history, at any rate not on sufficiently scientific data as to render such tales reliable, and we may dismiss them from our consideration. But that some kind of transplantation did take place we have Hunter to substantiate, for he mentions in his work "On the Teeth" that "we can actually transplant a tooth from one person to another without great difficulty, nature assisting the operation if it is done in such a way that she can assist, and the only way in which nature can assist with respect either to size or shape, is by having the fang of the transplanted tooth rather smaller than the socket, the socket in this place grows to the tooth. If the fang is too large it is impossible, indeed, to insert it at all in that state; however, if the fang should be originally too large it may be made less, and this seems to answer the purpose as well. In like manner a fresh tooth, when transplanted from one socket to another, becomes to all appearance a part of that body to which it is now attached, as much as it was of the one from which it was taken."

The above description did not escape the notice of that astute observer, Mr. T. Bell, who remarks that "the practise of transplanting teeth from one person to another originated, I believe, with Hunter, under whose superintendence it was frequently performed. Had the result of all these cases been known to him, it is probable that this recommendation would not have been written. There is not, I believe, a

single instance of its perfect success, and there are many in which it has been followed by even fatal results." Since the above was written, the science of dentistry has made rapid strides; but the cases of transplantation are still rare, although its sister operation—replanting the extracted tooth in its own socket—has very often been attempted. We find Mr. Fox speaking in his work on "The Teeth," of the temporary removal of a tooth to cure toothache, the arrest of the caries, and the replacement of the tooth in the socket after filling the cavity with gold. Since his time there are several records of the same operation being performed, and with more or less success; but it has been left for our American cousins, in this as in many other matters, to place us in the shade, and to outstrip us in the operations as well as the success attending them. We read in the Transactions of the American Dental Association for 1876, that it is a common occurrence for a patient to have a tooth extracted, have it filled with gold, and call again for it and have it replaced with success, and, in a little time, hardly cognizant of such an operation having been performed. Nay, more, we read that, in one case, the palatine wall, being the best looking, was brought to the buccal side, but the writer is silent about its success. Another still more difficult case is reported, in which a wisdom tooth, or, rather, the *two distinct* roots of it were removed, and a sister of the patient's, having rather a crowded mouth, agreed to loose a corresponding tooth to replace her sister's departed molar. Certainly, a very sisterly act to do, and which few in our phlegmatic country would agree to. Then, perhaps, they would seldom be asked to do so, and would not have the opportunity of showing their affection for each other. But the transplanting of the above tooth was not the easy task the operator had thought for. Behold, the sister's tooth had but one fang, instead of the family likeness it was expected to bear to the offending stumps, so the cavity had to be prepared to receive the one-fang tooth, and, the septum having been broken down and the cavity enlarged, the tooth was placed in situ, and became a splendid masticator, doing a good service, and was a *dens sapientiæ* in the fullest sense. Taking out these wisdom teeth, filling, and replacing them seems to be a very common occurrence in America. Another gentleman relates the wanting a lateral incisor to transplant in a

cavity, and, looking over some old teeth he had by him, found one suitable. Being decayed, he filled it with gold (one would have thought a sound one might have been found), and as the fang was too large it had to be dressed down to size, which was done, and the tooth forced into the socket, and, in 3 years time. it remained perfectly firm and successful. A double case of transplanting teeth is spoken of by one gentleman in which a bicuspid was taken out of a young lady's mouth, because it was crowded, and a similar tooth removed from the mother, which was then placed in the daughter's mouth, whilst the daughter's tooth was placed in the socket left by the more mature tooth of the mother. In this case you are left to infer success. We must suppose there was some great advantage in thus ringing the changes. Let us hope it was mutual. I do not find it is so usual to perform these kind of operations in this country as is reported is done elsewhere. It would be difficult, I imagine, to find a number of patients that would permit such practice, could you find a practitioner strong minded enough to advise such treatment.

Speaking for myself, I can only say that when the tooth is removed the patient is too delighted to have anything more to do with it; and to undergo further pain from the offending member, if possible to avoid it, is more than the generality of patients can be expected to do, even if success can be spoken of with certainty. In speaking of success, there can be but one meaning of the word, not degrees,—simply that the parts operated on shall be useful as well as ornamental, perfect for all purposes that nature intended; and, I must candidly say, I have yet to learn the way to transplant teeth successfully and with certainty. The following cases are much milder in force than those spoken of above, yet allied somewhat; and, as will be seen, the treatment was at fault somewhere, yet I know not where. Other cases similar I have had, and perhaps might record success against them, as after some two months the patient has been lost sight of, apparently well, but what those teeth have been after some years I am at a loss to report, consequently do not record them successful. Some of the most common form of cases that present themselves for treatment is where some of the incisor teeth are displaced by cricket or football, and here we have all in our

favour for a successful issue as regards vigour, youth, and health. Sometimes patience is needed on the patient's part, but they are usually amenable to reason, and yet success is not the rule. The tooth sooner or later shows signs of necrosis, owing no doubt to the death of the pulp; and if that could be removed, perhaps success would be enhanced. But unless the tooth extracted has a piece cut off the apex, and the nerve removed through the foramen, there is no way of getting it away, and I have hesitated to do that. But after the experience of my American friends I am not sure that that should not be done, for they extirpate nerve, denude of cementum, &c., yet they record success in their cases; yet in some operations which resemble those noted they do not speak of getting necrosid teeth as a result, i.e., they push up teeth if too long, and pull them down if too short, and one would imagine that in pulling them down they would sever the nerve, for it must be very difficult to pull down a tooth just far enough and no further. I should have thought the tooth if it moved at all would come right out, and require replacement, but I suppose it does not.

G. M. etat 16, a healthy boy at Eton, consulted me, having the day before received a blow from a cricket ball on the right central incisor. The lip was much bruised, the gum congested, and the tooth loose, but had not been out of its socket. Means were taken to reduce the inflammation, and the tooth tied by silk ligature to its neighbours, a small vulcanite frame was adapted to firmly grasp the tooth and keep the lower teeth from impinging thereon. This was worn for three months, the general health being good the whole of the time. The tooth was then firm, but was tender to bite upon, slightly longer than its fellow, and looked a trifle more opaque. The plate was worn some five months altogether, and the case might be called a success, but I saw this tooth some four years afterwards, when it was quite dark, and although firm, was evidently necrosid, and had to be removed soon afterwards. On cutting the tooth in halves the nerve was found wanting. Another of the same kind of accident presented itself for treatment, but here two teeth were implicated, the central and lateral incisions of the right side. The patient, a stout youth of 17, had a blow whilst playing at football the day before,

and which knocked the lateral incisor into his mouth, and very much loosened the central; a local medical man had soon seen the patient, the lateral had been replaced in its socket immediately after the accident, and had done what was necessary to reduce the inflammation. Here the teeth nerve kept firmly in position for some time, but the central gave much trouble, suppuration took place, and eventually had to be removed, whilst, strange to say, the lateral remained and became pretty firm until the absorption of the alveolus, and the adjacent artificial central assisted its departure some three years after the accident. Many others I have had, but these two are typical of that kind of lesion. There is another of similar kind, that will present itself to most practitioners in large practice where you hear of the wrong tooth having been taken out, or one more than required removed, and which may arise in this way. The 6 year old molar may be much decayed on its anterior third, and pushed forward by the two molar teeth behind, under the second bicuspid, and the removal of the decayed molar will bring the bicuspid away with it; and these teeth will come out of their socket with very little pressure brought to bear upon them. A young practitioner looks astonished at finding he has removed two teeth instead of one, and one of them a sound one, and, not having explained to the patient beforehand the likelihood of so doing, he is in a dilemma. There is the chance of it tightening if replaced in its socket, but by no means a certainty of its so doing; but, still, it is worth trying, and the only thing to do, and, to make that chance less likely to fail, he must carefully wash out the cavity with warm water—temperature not less than 90°—also the tooth, and remove any coagula that may be thereon, and quickly replace the tooth in its socket. He must then adjust some gutta percha to the adjoining parts to act as a splint, and to keep the bite off the bicuspid, after which, a vulcanite splint may be adjusted and worn for some time. If the patient is healthy and *patient* in every way, the tooth may get firm and useful again; but neither patient nor dentist must be disappointed if such is not the case, as, unless it heals, as it were, by first intention, it will become an irritant, and cause inflammation, suppuration, and many more ills that flesh is heir to.

HISTORY OF THE ANÆSTHETIC GAS.

BY JAMES STOCKEN, L.D.S., R.C.S.

LECTURER ON DENTAL MATERIA MEDICA AT THE NATIONAL DENTAL COLLEGE,
DENTAL SURGEON TO THE NATIONAL DENTAL HOSPITAL.

IN the September number of the *Monthly Review of Dental Surgery*, there is a communication from Mr. Shaw, of Manchester, purporting to correct my history of Nitrous Oxide Gas, as it appeared in a previous number of the said journal.

Whoever assumes to write in a public journal must be prepared for criticism, but before a gentleman uses the following language he should be quite sure of his premises. Thus writes Mr. Shaw—"It has always appeared to me necessary, in writing on any subject, that the writer should have, at least some knowledge of the matter under consideration," &c. &c. Again—"It is not often that a writer manages to be in error in every particular, yet I think Mr. Stocken may fairly claim the honour of having achieved this difficult and ingenious feat."

There is no beating about the bush in this language, nevertheless I am quite prepared to take the responsibility of what I have written. The above remarks of Mr. Shaw apply only to my *history* of the gas, as to the rest of the article he is pleased to consider it "not only unobjectionable but most interesting." I am thankful for small mercies.

That the readers of the "Monthly Review" may judge me fairly, I will quote the historical portion of my article, and then give my authorities. There is much historical matter in connection with this gas that is most interesting and instructive, but I would remind readers, and also Mr. Shaw, that I never assumed to write a *history* of this agent. In my articles on Dental Materia Medica my object has been a humble endeavour to impart, to the best of my ability, information relating to the therapeutic action and physiological effects of certain agents, which we, as dentists, are called upon to use or prescribe, therefore my historical notices have been intentionally of a very meagre character; and in reading my articles I beg this may be borne in mind.

My history, as it appears in the said journal, reads thus. "Discovered by Dr. Priestly in 1776, he called it dephlogisticated nitrous air; Sir H. Davy called it nitrous oxide; it is commonly called laughing gas. Its applicability as an anæsthetic in surgery was first noticed by

the late Sir J. Y. Simpson in 1847, but it was not till twenty years afterwards that it came into general use, and then only in those cases where speedy anæsthesia was required for short operations, to which its use has been principally limited. About this time the attention of the late Horace Wells, and Drs. Colton and Cotton was directed to its applicability in Dental Surgery. It was introduced by the latter to Dr. Evans of Paris, and by him, in 1868, to the Dental Profession in England."

Mr. Shaw says—"now the applicability of the gas as an anæsthetic was not first noticed by Sir J. Sympson, but it was pointed out as early as 1801 by Sir H. Davy. Nor had Sir J. Sympson the least to do in making the gas known, nor was he, as seems to be so readily assumed, the author of the anæsthetic discovery," &c. &c.

Mr. Shaw has omitted the word "Surgery," which changes the whole character of the sentence. My quotation reads thus—"its applicability as an anæsthetic in *surgery* was first noticed by Sir J. Y. Simpson," &c. This is a quotation from a note in "Waring's Practical Therapeutics," page 414—1871. The same also occurs in "Pereira's Materia Medica," 3rd Ed., 1847. It is there stated that it produces a state of anæsthesia or insensibility to pain during surgical operations. Both these quotations refer to a pamphlet written by Sir J. Y. Simpson in 1847, upon the use of anæsthetics in surgery.

The part Sir J. Y. Simpson took in this matter may be ascertained by a reference to the London and Edinburgh Monthly Journal for 1847. It is there recorded that Sir J. Y. Simpson read a paper before the Medico-Chirurgical Society at Edinburgh upon this very matter, and wherein is the following. "It is now well ascertained that three chemical bodies possess, when inhaled into the lungs, the power of super-inducing a state of anæsthesia or insensibility to pain in surgical operations, &c., namely, nitrous oxide, sulphuric ether and perchloride of formyle."

Referring to a table, he says: "The following tabular view shows that these agents are entirely different from each other in their chemical constitution, and hence that their elementary composition affords no apparent clue to the explanation of their anæsthetic properties."

I have seen in the Library of the Royal College of

Surgeons of England, the pamphlet referred to. Further quotations might be given, but those will suffice for my purpose, and prove that Sir J. Y. Simpson was the first to notice its application to *general surgery*. I did not say dentistry.

I may here remark, in revising my articles, with a view to their publication in a complete form (they are now before the public), I made many alterations and additions; among them is inserted in the 4th line of the *History* the word "also" in place of "first." This alteration was in no way dependent upon Mr. Shaw's communication, for the final proofs were struck off before its appearance. After the quotations given, I think my readers will scarcely agree with Mr. Shaw that Sir J. Y. Simpson "had not the least to do with making the gas known."

With regard to Sir H. Davy, I was fully acquainted with his experiments, and the fact of my having mentioned his name in connection with this matter is proof of it.

The next point in question relates to Horace Wells.

Mr. Shaw says—
"It was not twenty years after 1847 that the attention of Horace Wells was directed to the applicability of the gas in dental surgery, for he died in 1845"

Such a rendering of my article was never intended, and a careful reading would have suggested this to Mr. Shaw. It can be so read, I admit, but to remove the ambiguity, 1847 should have been inserted in parenthesis. As Horace Wells' observation of the effects of this agent happened in 1845, I have qualified the date 1847, by the use of the term "about." There is no doubt Sir J. Y. Simpson was well acquainted with Horace Wells, and many other Americans, in connection with this agent, for he mentions several names. Horace Wells did not die in 1845. He wrote and published a pamphlet vindicating his claims in March, 1847. He also paid a visit to England in 1847. Cases are recorded during the years 1845 to 1848, in which he administered the gas; the last of which I think took place on the 4th January, 1848. He died at New York on 24th January, 1848. Aged 33.

"There is no Dr. Cotton in the case, and this is an evident mistake for Colton."

"The gas was not introduced by Colton to Dr. Evans, of Paris."

Mr. Shaw is quite right. The error occurs in a small pamphlet by Barth, whence I took it; the error was corrected in the reprint.

Dr. Colton visited Paris in 1867; he called upon Dr. Evans and induced him to *adopt* the use of the gas. Mr. C. J. Fox informs me it was through Dr. Colton that Dr. Evans first used it, and he makes this assertion upon the verbal authority of Dr. Colton himself.

After H. Wells' decease in 1848—not 1845 as stated by Mr. Shaw—Dr. Colton for years tried unsuccessfully to induce dentists to adopt it, but in 1863, W. Smith of New Haven, Connecticut, operated while Colton gave the gas, and from that time its use in America became general.

In 1864 Mr. S. Lee Rymer tried to introduce it in England, and his first operation was performed at the "National Dental Hospital." But it was not until 1867 that its use became really established, and it was during that year that Dr. Evans of Paris visited England and gave £100 to the "Nitrous Oxide Fund of the London Dental Hospital." His motive, I believe, was that which animates most lovers of science, and not for fame.

The same year Dr. Colton visited this country, and his report of its use in America inspired such confidence that henceforth much prejudice was removed. I say prejudice, because the Englishman is a very conservative and cautious being. There were many difficulties connected with the use of this agent in early days—the manufacture of the gas, and the apparatus for its administration were crude, and certainly there was some risk which few men were prepared to run. Thanks to Messrs. Barth and Coxeter, we have now the gas both pure and portable; and much credit is due to Mr. Clover, not only for his persistence, but also for the efficient apparatus for its exhibition.

I will now leave the matter, that readers may judge how far Mr. Shaw's wholesale condemnation of my history of this agent is borne out by facts.

These matters sometimes require a great deal of re-

search, and one in full practice cannot always search for papers and pamphlet that are quoted; but surely we may trust quotations from such works as Pereira and Waring.

Clinical Remarks on Disease of the Upper Jaw.

Delivered at King's College Hospital.

By HENRY SMITH, F.R.C.S.

Professor of Surgery in King's College and Surgeon to King's College Hospital.

Abstract from "Medical Examiner."

GENTLEMEN,—I wish to say a few words about two cases which have caused a great deal of interest among us during the last few weeks in the hospital—two cases of disease of the upper jaw. They are both cases of malignant disease of the upper jaw, and they are both cases in which at first sight it would not be at all probable that any reasonable surgeon would expect to do any good by the operation. Another reason why these cases are interesting, independently of their pathology, is this, that the patients were in such a condition when they came in that one had made up one's mind that one could not interfere in any way whatever; but during their stay in the hospital circumstances occurred which made the surgeon alter his opinion, and the result of the alteration was that both the patients underwent a very formidable operation, the particulars of which you will hear presently.

The first case was that of a man between 50 and 60 years of age. When he was admitted he was suffering very much constitutionally. He had the cachectic appearance of a man suffering from cancer, and on looking into his mouth we found that there was a large growth spreading over the right side of the superior maxilla, chiefly involving as far as we could see, the mucous membrane. It was a large outgrowth of tissue looking like unhealthy thick granulations or like epithelioma. This large mass of tissue was not confined to the right side, it extended over the median line towards the left side; and in addition there was a considerable amount of swelling outside the jaw in front of the antrum, and, just below the orbital process of the superior maxilla, a sinus leading down to the bone through which one could introduce a probe. On examining the man's mouth we found that the hard palate was perforated by the growth, whatever it was: you could put your finger into the mouth through the hard palate, and then on introducing a probe into the orifice below the orbital process of the superior maxilla you could feel the probe; in fact you could feel the large cavity inside the antrum. The lining of the soft palate which covers the hard palate, especially round this opening, was covered by large granulations, which also extended across the median line towards the left side. The man had a considerable amount of discharge from the opening, and the nostril on the same side was entirely stopped; no air could pass through it whatever. Accordingly I made up my mind not to perform any operation whatever. However we kept the man in the hospital to watch the case, and to our great surprise within a few days his appearance became altered much for the better; he gained strength rapidly, and improved greatly, while the morbid growth

did not increase to any great extent; yet he was complaining of intense pain, especially about the temporal region; he complained of such excessive pain and at the same time improved so much in his health that I thought it a pity he should be allowed to die with this large growth attached to the upper jaw. The only difficulty I had about the case was this: The growth, as I have said seemed to spread across the median line towards the left side. I was afraid that we should have to remove a piece of the jaw on the left side as well. As a general rule, I believe it is considered that in cases of malignant disease a surgeon ought not to perform excision of the superior maxilla. That I think, as a rule, is right, but we know very well that there are many exceptions in surgery, and I believe this is one of the cases in which a surgeon may depart from the usual rule. I performed the operation some weeks ago, and removed the whole of the upper jaw; fortunately the growth, which appeared to extend over to the left side, did not in reality spring from the jaw on that side, but it sprang from the palate on the right side, and the granulations were so large that they extended over the median line as the leaves of a tree will extend far beyond the bough. The operation was attended with very considerable risk, for the disease extended far beyond this epitheliomatous growth, and in attempting to remove the whole of it a large vessel which we believed was the internal maxillary was wounded, and it required considerable alacrity on the part of my assistants and myself to prevent the man dying on the table. He bled so much, the blood getting into the trachea, &c., that it looked a very formidable proceeding. However, we happily accomplished the operation, the bleeding was stopped, and the diseased parts were removed. The patient soon rallied from the operation and the wound healed rapidly. I performed the operation which as you know Sir William Fergusson used to recommend, making an incision in the upper lip by the side of the nostril, and sometimes into the nostril. If necessary you have to go by the side of the nostril when the growth is as large as in this case. The wound healed rapidly and the patient has been sent out of the hospital. He improved so much that one was almost in hopes that we might have been mistaken and that the growth was not of a malignant character, but on an examination of the tumour after the operation it was unmistakably proved to be epitheliomatous. The patient frequently visits the hospital so that we may see him from day to day. The portion of the growth which is far back near the base of the skull remains. The patient complains of a great deal of pain in the head, but he has had great relief from the operation, and, although he will probably have a return of the disease to its full extent, I certainly do not regret having removed the tumour. Even for the sake of prolonging life for a short time, and saving the enormous amount of pain produced in this case, I think the surgeon was justified in removing the malignant growth.

In this man's case the skin was not involved at all. The epitheliomatous growth involved the mucous membrane of the jaw and the antrum, but it did not affect the skin.

There was not that great objection which we find in some cases of malignant disease, namely, the existence of extensive disease in the skin covering the tumour. That alone, not only in the case of growths in the upper jaw, but of other tumours, is a great bar to a surgeon performing any operation. A prudent surgeon would not attempt to perform any operation under such circumstances, when a very extensive amount of

skin is involved; he knows that nature will not repair the skin, and that in all probability before any amount of cicatrisation takes place the disease will return.

Here is another case which I want particularly to show you, and which I am pleased to show you in the present state. I look upon this poor fellow as a triumph of surgery in one sense, although it is a kind of triumph, perhaps, that we cannot be very proud of, but then that is not our fault. We can only go to a certain limit. Any one who had seen the condition in which the patient was a month ago would hardly have believed that it was possible to save him. He is a young man, 21 or 22 years of age, who came in with an enormous fungoid tumour protruding from the left side of the cheek, involving its whole surface, and infiltrating the tissue even over the inferior maxilla, completely destroying, for practical purposes, the use of the eye. We could not see anything in the interior of the orbit. In fact, we could not tell whether he had an eyeball or not. He presented one of the most formidable cases you can imagine of disease of the upper jaw. The poor fellow, who I am sorry to say, is deaf and dumb, presented a most pitiable object. Being unable to speak, he could give us very little assistance in regard to his history, and the circumstances connected with the case were altogether extremely difficult for the surgeon to deal with. We gathered from him as well as we could, and from his friends, that this disease, which had been going on for about eighteen months, had been operated upon by a distinguished surgeon, Mr. Savory, of St. Bartholomew's, who had removed the upper jaw and the molar bone. One could see the incisions that had been made, and could detect the line of incision in the palate, and see that the whole of the tumour had been removed. About nine months before he came into the hospital he had recovered from the operation. But the disease had rapidly re-appeared, and when he was admitted we found a large growth half as big as his own head involving the skin, which was in a state of disorganisation. It had just the appearance of a fungoid growth about to protrude. When I came to examine him, he was in a very depressed state, and suffered from great constitutional disturbance. My colleagues saw him; we were divided in opinion about the case, but the majority of us were of opinion that, under the circumstances—considering that a surgeon of great eminence and ability had performed an operation, and therefore in all probability removed the whole of the disease, and taking also into consideration the state in which the patient was,—the operation had better not be performed. We felt that there were as many circumstances against it as there were in its favour. For myself, I had pretty well made up my mind, taking all circumstances into consideration, that we had better not interfere with the case. However, the poor boy was kept in the hospital, that we might watch him. I may say that I kept him in really thinking that the poor fellow would die, and that we should have an opportunity of having a very good pathological specimen. However, during the time he remained a very great change took place. When he came in we found that we could not move the tumour. That is one point which I forgot to mention. In a case of malignant growth you ought not as a rule to attempt an operation unless you can move the tumour. If you find it is immovable you had better leave it alone, because in all probability, if you cannot move it with your hand, you cannot cut it away with a knife. After some weeks a good deal of disorganisation set in, ulceration rapidly

occured, and then what we feared began to take place—hæmorrhage to a considerable extent. The house surgeon and dressers were obliged to press upon the tumour, and they hardly dared undo the dressings. When we went round the wards we were very glad to escape undoing the dressings in consequence of the enormous amount of bleeding. The boy became blanched, and it was evident that he was about to die from hæmorrhage. Now seeing a patient die before one's eyes from hæmorrhage is not a pleasant sight, especially if it is possible to prevent it. The patient must lose his life in a few weeks or months, but still a surgeon is not loyal to surgery or to his profession if he allow such a thing to take place when it is possible to prevent it. Influenced by these considerations, I determined to perform the operation. Of course I knew it would be a very formidable affair, especially as a week or two before a patient undergoing a similar operation nearly died upon the table. I arranged for the operation on Saturday, but I was called away into the country, and I requested Mr. Rose to perform the operation. He did so, and executed it with his usual ability, luckily for the patient he got off the table with scarcely any bleeding. Mr. Rose was enabled with very little use of the knife almost to enucleate the entire mass, so that scarcely any disease remained. There was a large cavity left, of course, in front of the jaw. The skin was enormously diseased, but as far as the interior was concerned the disease was taken entirely, or almost entirely, away. The patient rapidly rallied after this serious operation. As I said before, it is almost impossible for any one to recognise him now, so great is the change in his appearance. We see that the skin shows a tendency to disease, but it subsided very much after the operation. There is, as you see, very little deformity, considering the enormous amount of diseased skin in the case. The skin has contracted, but there is a disposition to recurrence in the skin and the cellular tissue. Under the microscope the growth presented those aspects which indicate disease of a fibroid or sarcomatous character; there were numerous round cells indicating that kind of growth. The patient has had great relief from pain, and he is enjoying his life as much as it can be enjoyed; at all events he has been comparatively free from suffering.

I am glad to have had an opportunity of bringing these cases before you, because I think they are very similar in some respects, though they materially differ in regard to their pathological conditions. I have brought them forward as illustrations of how and where a surgeon may interfere in cases of malignant disease. I must beg of you not to go away with the idea that I recommend excision of the upper jaw, as a rule for malignant tumours. On the contrary, my conviction is, and I try to impart that same conviction to you, that, as a rule, a surgeon is not justified in performing such a severe operation as the removal of the upper jaw for malignant disease; but there are circumstances which will justify him in departing from that rule, and I believe these cases are illustrations of those circumstances.

Amalgam Fillings.

By C. H. LAND, D.D.S., Detroit, Michigan.

For the past eight or ten years I have realized the difficulty of making what might be called a perfect amalgam filling. After investiga-

ting the matter pretty thoroughly, by trying numerous experiments, believe that I have at least made one step toward an improvement; accordingly present my ideas, with the hope that you may find sufficient interest in them to give them a place in the MISCELLANY.

In order to be as brief as possible, will present them in the shape of simple directions as follows; Prepare the cavity precisely the same as for a gold filling, then take sufficient amalgam for the size of the cavity, place it in a piece of chamois skin, add to it the usual amount of mercury, and immediately twist them together in the skin, and see that all the surplus mercury is forced out between the fibres, then, as quick as possible, place part of it in the cavity, alternately adding dry amalgam, that has had no mercury in it; so proceed until it is gradually built up to the desired shape, then with a light mallet and a broad-footed plugger, continue to force the dry filling until it will accept no more, then burnish.

In this way I have made some of the most beautiful contour fillings, the work being sufficiently hard to withstand ordinary mastication before the patient left the chair,

My reasons for not using a mortar and pestle are based on the following chemical facts;

1. The constant agitating of amalgam in a mortar, which would be in direct contact with the atmosphere, would, according to chemical laws, form a greater amount of oxide than if it were not mixed or handled.

2. Since the great desideratum is to use the least possible amount of mercury, therefore the time consumed in grinding with a pestle would so incorporate the mercury with the prepared metal, that the most desirable features for a perfect working would be lost.

3. While the process of amalgamation is going on, is just the time for the operator to proceed with his work, the dry filling being added to take up the excess of mercury which would naturally exist in greater abundance at this favourable moment, the original mass not yet being thoroughly amalgamated.

4. By following the above directions and keeping the prominent ideas in view, you will realize that it will be unnecessary to wash the filling with alcohol, etc., as very little, if any, oxide would exist.—*Johnston's Dental Miscellany.*

Address given at the National Dental Hospital and College,
AT THE OPENING OF THE WINTER SESSION,

October 1st, 1877,

By SAMUEL LEE RYMER, L.D.S., R.C.S.,

PRESIDENT OF THE COLLEGE.

GENTLEMEN,—We who are interested in this re-organized and vigorous School have been looking forward with pleasure to the present opening day of the Winter Session, because we were promised what we knew must be an intellectual treat to all of us—whether councillors, professors or pupils—namely, an Introductory Address by one

of the most eminent men in the world of science, our old and esteemed friend, Dr. B. W. Richardson. It is therefore with great regret that I have to announce the inability of the learned doctor to be present with us to-night. It was hoped and believed that he could have arranged to deliver the address even up to last week, but the course of events has prevented it; and the Faculty of the College having requested me, at the eleventh hour, to take his place, I think it my duty under the circumstances to comply. Although, in lieu of a brilliant oration, you will listen to an address of a more humble sort, I know very well that you will accord me your kind attention during the short time at our disposal, whilst I say a few words firstly to the students who have entered upon their work here, and secondly to our friends generally upon the position and prospects of the profession of Dental Surgery at the present time.

Gentlemen Students, I do not doubt that in choosing your profession you have been actuated by the feeling that it is your proper sphere—that it has an attraction and an interest above other avocations, that the field of study, presenting as it does, variety,—and the prospect of usefulness to your fellow-men in the practice of this speciality has for you a charm, and that therefore you are determined to avail yourselves of the advantages provided for you in this school, and to go on *velis et remis*. To enter upon the pursuit of Dental Surgery in any other spirit would be indeed futile, the question of pounds, shillings and pence ought only to be considered as a secondary matter. Speaking generally, I don't believe in men following up avocations *merely* for the love of the work, although I have heard that sort of thing talked about often enough. It is right and proper that where a man has to live by his wits he should before commencing the battle of life give due attention to this matter, but the first question to ponder well is: "*What am I best fitted for?*"

People who know nothing about it often remark upon the practice of Dental Surgery as being "very profitable." Well, I see before me several old practitioners, and I think they will bear me out when I say that for a dentist to grow rich is the exception and not the rule. No! Dental Surgery must not be entered upon as a mere money grubbing profession. Entered upon for the love of it and with a legiti-

mate desire to live and to prosper thereby, the student has opened up to him an honourable calling, and one that is making rapid and sure strides in advance.

You then who have entered the National Dental College in this spirit may well look forward with hope and confidence. The special requirements of the Royal College of Surgeons are all provided for, and I venture to say that in no school of a similar character, whether in this country or abroad, does there exist a more earnest desire amongst the professors for the welfare of the pupils entrusted to their charge than in our own. These gentlemen give their whole heart to the work, and with the advantage of the large practice of the National Dental Hospital, Clinical instruction can be imparted with the best effect—and certainly there can be no more important point in the whole course of a professional education than Clinical instruction.

With such able and zealous teachers to direct you in the several departments of the College it would be superfluous, and almost impertinent, on my part, to attempt to advise you as to your course of study. That will be judiciously mapped out for you; and diligent attention on your part will enable you to attain, what I presume to be, the goal of your ambition—a creditable passing of the Examination in Dental Surgery of the College of Surgeons. I may, nevertheless, without presumption, be allowed to point out that great advantages are to be derived by each one for himself sketching out a course of study bearing upon the science of his calling, and yet not necessarily included in the ordinary routine of instruction. For instance, one or another of you may take a special interest in making acquaintance with old and modern authors other than those whose standard works all are supposed to study,—Hunter, Blake, Nasmyth, Goodsir, Bell, Huxley, Harris, Tomes, Richardson, and other such familiar names. There is a wonderful fund of rich information supplementary to standard authors to be found by research, and which, when found, will prove of value to him who has a mind to become a shining light to his professional brethren around him, as well as a benefactor to poor suffering humanity. I fear that comparatively few of us seniors are so well up as we ought to be in Owen, Lent, Magitot, Guillot, and the like, but the advantages of education now enjoyed by you were

not so easily available to us in our earlier days. It was therefore that we strove to procure them for you our successors, and we must look to you so to employ them, as to, by and bye, be prepared to instruct and delight others by your attainments, and which by pen or tongue you can find ready means to disseminate. Taking a course of your own in this way will in no wise interfere with regular duties—it will be found rather an aid to their successful prosecution, and at the same time a profitable diversion. The literary diversion (if I may be allowed the expression) indicated is only as an illustration—some other subject or subjects of research may seem to you more congenial.

I am reminded of a most valuable address given fifteen years ago at one of the American Dental Colleges by Professor Suesserott, an extract from which becomes appropriate. He says, "But while we urge you to labour in behalf of your profession, and to devotion to it, we would also warn you against bigotry, or that exclusive subjection to one thing, which will prevent your seeing anything good or advantageous in other departments of labour. The avocations and duties of life make up a chain of relationships with all of which you should be in sympathy. Truth, like the rays of light, radiates forth in all directions, and it is your duty not only to acknowledge it whenever it is found, but also as far as is consistent with proper attention to your own profession, to acquaint yourselves with it. Be not men of one idea, but make excursions constantly into other fields at once for your improvement and recreation. In this world, which is filled with subjects for our own contemplation and study, he is doing only part of his work who does not go somewhat beyond the limits, however broad, of his own peculiar calling. Thus alone can you secure the liberality of mind which is necessary not only for the proper discharge of the duties of your profession, but also to prepare you for fit relations with those with whom you will be called to co-operate. Do not understand us by this, however, to recommend to you that superficial course of study which is pursued by so many, who merely glance at subjects without giving attentive study to anything, who, like shallow cisterns, are very easily exhausted. Let your determination to know as much as you can be coupled with another of greater

importance, to dismiss no subject until you have mastered it, and thus every step which you take will help you to an easier advance in your future efforts." These are pregnant words, and worthy of great consideration, and as such I commend them to you.

I am tempted to make an extract from the address delivered at a kindred institution in 1875, by Sir James Paget, but really it is an address so full of interest that I should scarcely know where to stop. A printed copy thereof, however, has been deposited in your library, and you will be well repaid by its careful perusal.

In the prosecution of study it is of infinite moment that the mind be calm and undisturbed, and to this end a careful guard against all excesses is necessary. I only happen to be personally acquainted with two or three of the pupils before me, and the excellent character and conduct of these gentlemen, I have every reason to believe, actuates you all, so that I may conclude that you see the force of what I mean, and will act accordingly.

There is at the present time in the world a remarkable spirit of unrest consequent upon distrust in the old lines. Be on your guard against this also. A literature of foreign growth has unhappily become acclimatised in our land, and to which I attribute much that unsettles the weaker sort of our young men. Now it is no part of my duty to sermonize, but as a man of the world, having passed the meridian of life, and having had a considerable and varied experience of men and things, the conviction is strong upon me that the most sound advice I can give young men who want to utilize the fleeting little span of human existence to the best advantage is, before everything else, to study the teachings of that Grand old Book to which our own country, as well as others, where liberty, order, and happiness most flourish—owe their power and prosperity. I never yet knew one who regretted having taken the Bible as his Guide through life; and I don't think the world has cause to thank the restless minds bent, seemingly, upon sapping our proven foundations. They may tell us—

"Of old things all are over old,
Of good things none are good enough;
But we will shew that we can frame
A world of other stuff."

But never mind, we are content to hold fast that which is good.

I would add that no one more than myself can be impressed with the truth of the saying "All work and no play, makes Jack a dull boy." I have indicated one kind of "diversion" as valuable to the student, but I do not recommend it as the only one—on the contrary, I have great faith in a relief to the tension of study upon all reasonable occasions. The cultivation of music and of other refined arts tend to develop as well as to delight the faculties, whilst the intercourse of cultivated society is unquestionably a desideratum of the first importance to those destined for a liberal profession.

As a matter of encouragement, I may tell you that in the year 1863 it was my lot to distribute the prizes in this school. One of the prizemen on that occasion—and one who very greatly distinguished himself—is now the Dean here; and I need not say to you that in Mr. Oakley Coles the institution has a warm friend and a powerful supporter. To his energy is mainly due the perfection of our present arrangements. Others of our old pupils have likewise attained to excellent professional positions. I cannot let the opportunity pass without recalling our indebtedness to those founders of this school who for many years and against great discouragements worked for it in several capacities so ably. Some have passed away, but several, happily, are amongst us still. It will scarcely seem invidious to mention such names as Hulme, Richardson, Kempton, Perkins, Hockley, Williams, *cum multis aliis*.

Extending what I have to say to-night to the audience generally, I arrive at a new starting point.

The subject I now wish to talk to you about, gentlemen, in as condensed a manner as possible, is as to the position and prospects of the profession of Dental Surgery at the present time. In the first place, then, I cannot agree with many contributors to the periodical literature of the day that the position is unhealthy or the prospects gloomy. To my mind the situation promises well. Twenty-two years of laborious effort in a reformatory movement, and yet finality unaccomplished, may seem a long time to some, but really it appears to me to be as only the other day when we set to work in earnest; and it needs but to compare the chaotic state of the pro-

fession in 1856 with the organised arrangements of 1877 to prove that great results have certainly been achieved. I am not going to weary you with the history of the past. Those of you who may be unacquainted therewith will find an impartial record in Mr. Alfred Hill's most interesting book, entitled, "The History of the Reform Movement in the Dental profession in Great Britain During the Last Twenty Years;" the only fault I can find with which is that his old friendship causes him to give too much prominence to your humble servant. I know very well that not a few are of opinion that all the hard work, the expenditure of time, of money, and the exchange of hard knocks between, and ultimate fusion of, contending parties might all have been avoided. It is easy enough for people who took little or no part in the strife to be sagacious now, and point out what *ought* to have been done. I do not believe the work would have been more satisfactorily carried on if it had been delayed twenty years and attempted by these sages of the present day. At any rate we have this capital school; we have the larger one known as the London School of Dental Surgery—an institution of which we may well be proud, notwithstanding our personal association with another—for really there is no desire here other than to see that school prosper, no rivalry of an unworthy kind. There is plenty of room in this great London for both to flourish, and long may they do so.

But above all and everything we have secured to us an examination authorised by law, in the halls of the first surgical licensing body in the world—the College of Surgeons of England. "Sir!" somebody may say to me in surprise, "this from *you*, who opposed that form of examination for many long years, tooth and nail! This from you!" Certainly, my friend, I reply. In 1855 you will find my first view of this question recorded in the *Lancet*. The identical title I then suggested has been adopted for the dental degree now legally authorised. In the interum the great battle was fought as to whether a College with an independent charter would not be better. I thought so, but the weight of the profession was against such a policy, and the College of Surgeons came into possession of their power to institute the Dental examination in spite of us.

The duty of every man loyal to his profession then became clear—it was to give up an opposition utterly powerless for good, and yet with sufficient life in it to keep up a chronic irritation against the only possible legal authority. Thus my opposition ceased, and in company with a large number of good men and true, members of our respected old College of Dentists, I accepted the position; and any influence I have since then possessed has been exerted towards exalting the value of the qualification. *En passant*, I would remind you that the degree in Dental Surgery essentially recognises the special features indicated by its title, and as a matter of fact our action under it may become as independent as if we were in possession of another name. We have converged to a great centre by ways only apparently contradictory—

“I this infer,
That many things, having full reference
To one concent, may work contrariously,
As many arrows, loosed several ways,
Come to one mark; as many ways meet in one town;
As many fresh streams meet in one salt sea;
As many lines close in the dial's centre;
So may a thousand actions once a-foot,
End in one purpose, and be all well borne
Without defeat.”

I am not at all surprised to find movements going on with the object of adding to the present single centre of dental examinations, and upon the same basis. It is gratifying to see that throughout the country professional zeal is aroused to the necessity of action in such a cause, and we may well wish “God speed” to those engaged in the progressive march—for “progressive” I believe it to be in the fullest sense, even though there may have occurred differences of opinion as to the *modus operandi*. Authorized examinations then having been established, with a prospect of such examinations being extended beyond London, the question has very naturally arisen “What are we to do with the quacks?” These men go on just as usual, and indeed grow more impudent and imposing. “They ought to be kicked out,” say many. Of course they ought, but unfortunately there is opposed a difficulty in carrying out the operation.

The “bag and baggage” policy is as directly impracticable here as it appears to have been in another direction.

And yet something must be done. Now this something has been engaging the serious thought and attention of many earnest minds of late. Our legal recognition does not yet embrace certain important privileges, privileges which can alone be secured to us by a *system of registration*. To Mr. Charles James Fox is due great credit for the part he has taken in demonstrating this fact to the profession, as well for the labour he has bestowed upon the question. His action has led to a solution which bids fair to prove satisfactory and conclusive. Hence the election of the representative body known as "The Dental Reform Committee." This Committee has been spoken of as slow in movement, but the difficulties of the situation can scarcely have been weighed by the complainers. I need not go into the particulars of those difficulties; suffice it to say, that the deliberations have been conducted with a zealous desire to secure such a consolidation of all men practising Dental surgery as shall ensure, in the future, a generally qualified body; and that the result so far has been embodied in a series of resolutions which were passed on the 16th of last June. In these we find a recitation of the success which has attended the establishment of the Dental Department of the Royal College of Surgeons and the schools necessary to it, a practical acknowledgment that a special education was required, and that the one adopted meets the requirements of the large number of persons now practising who embraced the advantages of the special education, the statement is made, that it is felt by these and many others, whose professional life commenced at an earlier date, that a great public benefit will be secured if all who henceforth enter upon Dental practice shall first receive the special education enjoined by the Royal College of Surgeons, and if persons so qualified have the exclusive use of a title or titles or designation whereby the public may recognise or distinguish the qualified from the unqualified practitioner.

The following are the clauses:—

- "1. That those persons only who possess the Licentiate'ship in Dental Surgery of the Royal College of Surgeons of England, or a like qualification from any medical or surgical corporation which is or may become empowered to grant Dental Diplomas, shall be entitled to use the designation,

of Dental Surgeon, Surgeon Dentist, or Dental Practitioner, or Dentist.

- “ 2. That any person using either of the foregoing designation unless entitled to do so shall, on conviction before a Court of Justice, be fined in a sum not exceeding for the first offence, &c.
- “ 3. That a special schedule or schedules be added to the Medical Act for the registration of qualified Dental Surgeons as such only, subject to general conditions as apply to the registration of qualified medical practitioners in respect to fees, conduct, &c.
- “ 4. That of Dental practitioners, those who are registered shall alone be capable of recovering fees for Dental operations.
- “ 5. That all persons in practice as Dentists and all Dental Students shall be required to return both name and address with proper corroboration of accuracy within a specified time after the passing of the proposed act for the purpose of registration.”

The clauses referred to were passed unanimously, with the full concurrence and approval of the president, Mr. Tomes, and with a firm determination to carry them out, for, as it is well put by Mr. Turner, in a notification on the subject: “Although members of the Council are anxious to frame their measures in the most conciliatory manner possible, yet they feel that nothing short of the principles embodied in these resolutions will meet the just aspirations of the profession, or secure to the public a fair guarantee that the dentist of the future may be received as a competent practitioner.”

In accordance with the important stand thus taken, subsequent proceedings became essential, and the “Draft of a Bill to amend the law relating to Dental Practitioners” is now under consideration. As a member of the Council of the Dental Reform Committee, I am, of course, aware of all that is going on; but, as you can well understand, I am not at liberty to comment upon clauses still *sub judice*.

Now, the passing of an Act embodying the spirit of the resolutions of the Committee must be attended with great and lasting benefit, alike to our profession and the public. I know all about the objections to registering advertisers and the like scum. But it will be a numbering of their

days. The blot of the present will certainly be obliterated in the future, and it would be gross selfishness in any to refuse a cordial support of a great and beneficent action because they have a personal dislike to the way of carrying it out. The action we propose *is* great and beneficent, and there is but one way of carrying it. It is Hobson's choice—that or none. I need not point out that although all would probably have the right to register under the Act, the same distinction would exist as at present (until the natural disappearance of the non-qualified) between those holding degrees and those who possess none. The degree in Dental Surgery alone, be it remembered, does not confer privileges, so that, in *that respect*, the qualified are now no better off than the unqualified. As there is no hope of inducing the legislature to interfere with what are known as “vested rights,” the immediate ejection of the charlatan cannot be attempted; but, the Act once in force, we shall give him immediate notice to quit. Let it be, if you please, very clearly understood that, in speaking of “unqualified men,” I do not make use of the term disrespectfully as towards the considerable number of educated, able, and respectable practitioners who have hitherto been unavoidably prevented from taking up the Dental Degree. These gentlemen feel, as acutely as the *diplômées*, the humiliation of being associated, in name, with pretenders; but, “until the harvest,” we must all “grow together.” In the mean time, a very good opportunity of educating the public upon the pretensions of empirics is at hand. I refer to the book of our friend, Mr. Weiss, entitled “Vernon Galbray,” which we should do well to assist in disseminating.

In reference to the accomplishments of the last twenty-two years, I have not touched upon the existence of our scientific societies—of their utility and importance, whether as means for the extension of research, the diffusion of knowledge, or of fraternal intercourse, there can be no question. The literature too, has become extensive, and its character displays a large amount of culture and intelligence. My aim tonight is especially to point out that the political situation is one of promise, therefore I have avoided incidentals, even though of so prominent an interest as each of these institutions possesses. I hope I have succeeded in proving that the present state of affairs is very different, and a great

deal better than it was two and twenty years ago, and that our labour has not been in vain. As regards what is now going on you will have discovered my opinion. I am satisfied we are on the right tack, but for crowning success one thing is imperatively called for, *i.e.*, UNITED ACTION. Whether we belong to this society or that society, whether we hold qualifications or otherwise, let us all sink minor differences, and unite in supporting the disinterested efforts of the Dental Reform Committee to establish the profession of Dental Surgery upon as satisfactory a foundation as that of medicine itself. My experience of the broad liberality of sentiment permeating the profession leads me to entertain no doubt that the needful support will be freely accorded, and that the great opportunity now presented will not be lost. If it be lost, we must inevitably come to a full stop. An independent examining college may again be proposed, but not, I should say, by a sane person. The ideas of a new and exclusive society might find ventilation within a limited area, but they would come to naught.

Unless I am greatly mistaken in my observations, overshadowing clouds are breaking and sunshine may ere long—I don't say immediately—be confidently expected to gladden us on our way, and not us alone who are engaged in the special work of the Dental art, but also the great profession of medicine generally, the members of which are always ready to acknowledge the importance of the aid we are frequently enabled to render them as coadjutors in the treatment of cases in which the organs of mastication are more or less involved, and who are constantly seeing the evil effects of incompetent practice. The Medical profession, I say, will hail with delight the realization of our desire so to consolidate the profession as to guarantee its ultimate honour and efficiency.

Lastly, we have the great force of public opinion to strengthen the righteous cause. The continual need of our services by the people has taught them that they are not safe in unqualified hands. This fact is acknowledged universally. The senate, the bar, the pulpit, the stage, the platform, have each members in large number ready to salute us as benefactors, and warm will be their congratulations when they hear of the elevation of our calling. And so it ought to be; for of what service to society, in the capacity of a public speaker, is a man, however great

his intellectual power, *sans teeth*. He might almost as well be *sans everything*! So on, through all grades, down to the poor patients of our special hospitals, the Dentist is essential to the health, the comfort, and the well being of the community.

Seeing then, that we have these potent interests in our favour we may well take heart and with confidence await the results of the future.

The task I have undertaken has now been fulfilled, imperfectly it is true, but still in sincerity. My object in chief, on the present occasion, has been to light the torch of ENCOURAGEMENT. It is needed by the student as well as by the reformer; and if I have, in any measure succeeded in the effort—happy am I!

Conference of Dentists in Edinburgh.

A CONFERENCE of Dentists was held at No. 5, St. Andrew Square, Edinburgh, on Saturday, 6th October, "To consider the future position of the Dental profession in regard to means of education, in the event of the present registration movement being successful."

There were about 100 gentlemen present, including the following:—Mr. J. Tones, F.R.S., London; Mr. W. Williamson, Aberdeen; Mr. J. Smith Turner, London; Mr. George F. Scott, Edinburgh; Mr. James H. Proctor, Edinburgh; Mr. Wm. Hannah, Edinburgh; Mr. J. A. Robertson, B.A. (Oxon); Mr. A. P. Robertson, Glasgow; Mr. David Dunlop, Kilmarnock; Mr. W. A. Roberts, Edinburgh; Mr. William Duncan, Cupar; Mr. James Wallace, Glasgow; Mr. John Walker, Paisley; Mr. W. M. Fisher, Dundee; Mr. William Chisholm; Mr. John Melville; Mr. Alexander Cormack, Edinburgh; Mr. John N. Crichton, Perth; Mr. John A. Briggs, Glasgow; Mr. Joseph Harrison, Sheffield; Mr. Frank A. Huet, Manchester; Mr. John Caldecleugh, Durham; Mr. John Gourlay, Glasgow; Mr. J. Cowan Woodburn, Glasgow; Mr. W. S. Woodburn, Glasgow; Mr. John Foulds, Glasgow; Mr. Leon G. Platt, Stirling; Mr. James G. Surene, Edinburgh; Mr. F. J. Vanderpant, Kingston-on-Thames; Mr. J. S. Cropper, Hanley, Stafford; Dr. Joseph Walker, London; Mr. Alfred A. De Lessert, Aberdeen; Mr. James Dobie, Paisley; Mr. Henry Adams, Dundee; Mr. J. B. Brownlie, Glasgow; Mr. P. B. Gorrie, Perth; Mr. J. A. Gordon, Inverness; Mr. T. B. Cameron, Paisley; Mr. George W. Watson, Edinburgh; Mr. D. W. Hogue, Edinburgh; Mr. John Stewart, Perth; Mr.

James Wilkie, Edinburgh; Mr. James Nisbet; Mr. J. P. Chisholm jun., Edinburgh; Mr. John Wood, Dumfries; Mr. George T. B. Barron, Dunfermline; Mr. W. Campbell, Dundee; Mr. A. Wilson, Edinburgh; Mr. Sidney Wormald, Stockport; Mr. R. Rogers, Cheltenham; Mr. J. Laws, Bolton; Dr. Waite, Liverpool; Mr. John Wells, Berwick-on-Tweed; Mr. Evelyn Pierrepont, Manchester; Mr. Malcolm McGregor, Edinburgh; Mr. Charles Matthews, Edinburgh; Mr. James Hardie, Alloa; Dr. J. A. Robertson, Cupar-Fife; Mr. Thomas Hardie, Edinburgh; Mr. R. Hepburn, London; Mr. Walter J. Hardie, Montrose; Mr. David Hepburn, Edinburgh; Dr. J. Smith, Edinburgh; Mr. Robert Reid, Edinburgh; Mr. Finlayson, Leith; Mr. Walter Campbell, Mr. W. Bowman, Macleod; Mr. A. Wilson, Edinburgh; Mr. James Wood, Edinburgh; Mr. David Beattie, Edinburgh; Mr. G. F. Scott, Dr. J. C. Woodburn, Glasgow; Mr. J. Stewart, Greenock; Mr. Caldcleugh, Durham; Mr. W. T. Woodburn, Glasgow; Mr. G. Cooper, Edinburgh; Mr. Ritchie, Edinburgh; Mr. Arnim, Edinburgh; Mr. H. Roberts, Edinburgh; Mr. J. Hannah, Edinburgh; Mr. J. O'Duffy, Dublin; Mr. J. Forrester, Edinburgh; Mr. J. Grant, Inverness; Mr. Gentle, Edinburgh; Mr. R. Hooper, Edinburgh; Mr. J. Shiach, Elgin; Mr. A. Smith, Glasgow; Mr. W. Taylor, Glasgow, &c.

On the company having assembled,

MR. CAMPBELL, Dundee, said:—Gentlemen, will you kindly allow me before the chair is taken, to state as Chairman of the Committee of Arrangement, as briefly as possible, how this Committee came into existence, and how this Meeting was called. Mr. Macleod, our energetic honorary secretary, was present at the Manchester meeting, where his zeal in the cause of Dental Reform received fresh impetus. Shortly after his return he took it upon himself to send circulars to every member of our Society and others, asking whether they would be agreeable to attend a meeting for Dental Reform, to be held in Edinburgh on the day afterwards to be fixed. To these circulars he received a willing response. I suggested to Mr. Macleod by letter that a meeting of those most favourable to Dental Reform should be held soon to have a chat over the matter. We met in the house of Mr. McGregor, and were bold enough there and then, to form ourselves into a Committee of Management. Soon after this I suggested to our honorary secretary that we should have another meeting, not this time in a private house but in an hotel, with the view of adding to our Committee, and drawing up resolutions to be submitted to this meeting. At our first meeting it was suggested, and at the second it was confirmed, that the most highly esteemed member of our profession, who, if not national, is truly cosmopolitan, should preside over our meeting. That Mr. Tomes is

present with us is the best proof of his willingness to help us. I need hardly add that the Committee of Management will now be counted amongst the things that were. I have now the pleasure of proposing that Mr. Tomes should take the chair, and preside over this meeting.

Mr. HARRISON, Sheffield: I have great pleasure in seconding the motion.

The motion was unanimously agreed to, and Mr. Tomes took the chair, amid loud cheers.

The CHAIRMAN, who, on rising, was again loudly applauded, said: Gentlemen, it is with great hesitation and fear that I accept the responsible office of chairman to this very important meeting. I fear that, in honouring a guest, you may have injured the great cause for the furtherance of which we have this day met, for there are those present who could have stated more clearly and forcibly the facts which should guide us in determining what should be the measure, the nature, and the extent of the education of the Dental surgeon of the future in Scotland, and, to some extent, in England too, for the two nations are as one in all that concerns educational progress. Upon the wisdom, or the want of wisdom, of the resolution which this meeting adopts will greatly depend the competency, and even the comfort and status, of our successors—our professional children; for a mastery of the subject we profess is necessary to self respect, without which we shall feel otherwise than proud of our calling, and seek social position from attainments which have but a partial bearing, or are altogether extraneous to the business of our lives. The education of the young must, at all times, be determined by their seniors, and obedience must be insisted on. The parent, or he who represents him, must govern the education of the child. The seniors of our profession must govern the education of its youth, and the responsibility which the members of this conference accepts in determining what that professional education should be in their opinion is a heavy one. Fortunately, we need not enter upon the question without the aid of experience, furnished by this and other countries. In London, at the commencement of the century, there were not, I believe, a dozen dentists; now there are about 500. In Edinburgh there were not 4, now there are over 40, and in the provincial towns they had no existence. Now there are in Great Britain nearly 2,000, without counting those in Ireland. Until within the last twenty years, Dental practice was approached from two distinct and very different points, and the difference of approach led to differences in professional characters and feelings, which, up to the present time, have been a barrier to the attainment of that completeness of professional education which it should be the business of this generation to bring about. From the one side came the qualified surgeon, who had yet to gain

technical skill, and this he trusted to acquire by the experience afforded by the treatment of patients or from private instruction. At the hospitals nothing could be seen but mere rude tooth drawing, so that his proficiency in the art which was to form the business of his life depended on unusual personal aptitude, or on great luck in the selection of a teacher. From the other side came practitioners who had entered upon special training as articulated pupils in their youth, serving with established dentists from their school days up to the age of 20 years. From 5 to 7 years had been devoted to special training, but they had received no systematic surgical education. If they were real dentists they were but amateur surgeons. Still, it cannot be denied that they more than held their own against those whose surgical education was completed before they thought of Dental practice. From another source persons entered upon Dental practice. They were of the artisan class, with but little general education, and knew only how to make artificial teeth. Bright exceptions are to be found in those who, as boys, were employed as dental artisans, but who, as men, educated themselves out of their own earnings, and in some instances did not stop short until they had become qualified surgeons. The dentist with the surgical qualification regarded the dentist who had received only a special education as his inferior, and often declined to act with him on terms of equality; while the latter declared that the former was unskilful as a dentist whatever he might be as a surgeon, and pointed to the numerical superiority of the technical dentist, and to their more than equal success in practice, in proof of the assertion. This wretched state of antagonism and false pride was a sad hindrance to any unity of purpose in amending professional education. They were both dentists, after all, and the public cared little about Diplomas so long as efficient assistance was forthcoming at the time of need. Both were imperfectly educated. The one wanted surgical, and the other technical training. It required the fusion of the two to make a really competent practitioner. The one knew the grammar of dental surgery, but could not apply it; the other had learned how to practise, but knew not the surgical laws by which the practise should be governed. The two would not work in the same team to draw the profession out of its educational difficulty. The Americans were, I think, the first to recognise the fact that private training for the dentist was, at best, uncertain in its results, and mischievous in its general effects—leading to secrecy in methods of practise, to personal jealousy and illiberality of feeling amongst practitioners. About thirty years ago, Dental Schools were formed in some of the large American cities, and Diplomas of right to practise given after examination. The highly practical turn of the American people

showed itself in the Dental Schools. They were made independent of the Medical Schools, and although they were worked with great energy and produced a large body of highly skilled practitioners, they failed somewhat in the strictly surgical training. They did service, but not all the service required. This has been recognised, and the Dental department of the Harvard University, enjoying a combined surgical and special training, issues the most valued Dental Diploma of the United States; and the improvement is extending to other American Dental Colleges. The advantages secured to the American student by properly organized schools devoted to special training was fully recognised, and the disadvantage of insufficient surgical knowledge was not overlooked. Under the guidance of the experience gained by our transatlantic friends, the dental curriculum of the College of Surgeons of England was framed. To accept the strong points, and to strengthen the weak points of the American system of culture in Dental schools, was the aim of those who took part in determining the details; and I think it will be fully admitted that the education fully carried out produces in the licentiate in dental surgery a very competent practitioner. I do not for a moment suppose that our system of education is perfect, or incapable of improvement in its details. It would be strange, indeed, if an institution not yet, in the language of the law, of age, were perfect. But it is by far the best thing yet done, and I think that if the examination of candidates were put in practice, it would for the present need no material change. It must not be forgotten in our survey that the great advances which dental surgery has made here, and in America, have been made in two countries where any person whatever, whether educated or wholly uneducated, can train himself to be, and proceed to practise as, a dentist. A man may not call himself a Doctor of Medicine unless he is duly qualified, and his qualifications registered; but any person may train himself as a tooth doctor, dentist, or surgeon-dentist, without incurring a penalty. On the Continent we see a deficient state of things. In Germany, Austria, Belgium, and in some other countries, a medical diploma is required of the dentist, but the need of special training is not recognised. No dental schools exist, and dental surgery is there at a very low ebb. I do not quite know the regulations in France, but the subject of dental surgery is not taught at special schools; and, if report speaks rightly, the American practitioner in Paris is taking the place of the French dentist—I suppose on the principle that the fittest survives the unfit. It may be broadly stated that in these countries where a medical qualification is insisted on as a sole condition for the dentist, dental surgery does not prosper. The reason, I think, lies close at hand. The period of youth is wholly occupied in medical studies, and the special studies are delayed to

a time when the mind may be more trained, but when the untrained fingers were much less obedient to the will. Where great manipulative skill is required, the training must commence in youth, for if delayed it comes with difficulty, or comes not at all. This fact is seldom sufficiently kept in mind, here or elsewhere.

The time will not be wasted if we inquire a little more clearly into what constitutes a sufficient technical education, and what should be its relation to surgical, for the question forms the heart of the subject which we have met to discuss. Two years have been considered as the minimum of time in which the student, with good teaching in the midst of fellow-students, who are in various stages of proficiency, and with close application on his own part, can acquire the needful amount of skill, can reduce his hands to that unconscious obedience to his will, without which his life will, or ought to be, a failure. It has been said that the operations of the dentist are merely mechanical work, and it is so in the same sense as in every surgical operation, every work of art, whether of the sculptor or artist, and it is as varied as is the work of either; for it is varied with every patient, and is as difficult as either if rightly done. My own experience as a teacher is that the student, at the end of the first year seems to have made but little way; but by the end of the second he has learned what to attempt and how to accomplish the end he proposes, his hands becoming automatically obedient to his will. Now, I believe that this progress is not attainable in two years unless the student is surrounded by fellow-workers, to whom he can constantly refer, and whose manner of working he can frequently witness. It must not be supposed that I attach a greater value to technical skill than to surgical knowledge. In my mind they are of equal value, and he who possesses only the one is but half a dentist. When the Dental curriculum was framed it was simply to establish an education equal in degree but somewhat different in kind to that required of the surgeon—the M.R.C.S. Those special subjects of the general surgical training which could be of but little value to the dentist were replaced by those which were essential to his competence as a practitioner, and the only ground upon which the difference of professional status could be maintained was the exemption of a preliminary examination in arts of the dental student. But the distinction no longer exists. From this month henceforth the pupil of both surgical and dental schools, before he can register his attendance at hospital or school, must have passed the examination in arts required by the College of Surgeons. If the purposes of the curriculum have not been fully carried out the fault does not lie in the dental training for which alone the dentists were responsible. The surgical training was entrusted to the medical school and hospital and to the surgical section of the dental board of examiners, the whole

period of professional education being four years for the Licentiate as for the Member of the College of Surgeons. If candidates have presented themselves less well prepared in respect to surgical accomplishments than was contemplated as an ultimate result of the curriculum, it must be remembered that the powers of the Colleges are for the present permissive only, that the candidates present themselves for examination of their own free will, and that judicious leniency on the part of the surgical examiner, while the qualification is in its infancy, tends to encourage dental education. But such leniency is quite unneeded, and indeed would be baneful on the part of the dental section of the board of examiners. By some it has been urged that both the membership and licentiate should be taken by the dentist. This would impose on the dentists an education longer in time and greater in cost by one-third than that required of the surgeon, and would, in fact, impose conditions which few students could meet. The idea that, within the prescribed four years of study, both the membership and the licentiateship can be obtained, is sufficiently answered by the fact that over a third of the candidates for the membership are rejected. It is obvious that the four years, if not too short a time for medical study, is, at all events, very fully occupied by the most talented and industrious, and, for the less gifted student, it is obviously too short. In neither case can the two years required for Dental studies be given otherwise than by addition to the four; and, for reasons already given, the special training should not be delayed till the medical education is completed. The need of the membership, in the estimation of those who need help in their practice, is expressed in their selection of assistants or successors. The practitioner, whether he be a member of the College of Surgeons or not, requires from the most skilful pupil the licentiateship, but the membership of the College is not allowed to weigh against superior skill in the selection. To the student, in whose interest these meetings are for the most part held, I would say, at the outset make up your mind whether you will be a surgeon or a Dentist, or Dental Surgeon, and, whichever you select, make yourself thorough master of it before you think of any other qualifications. Having first secured proficiency in the business of your life—if that be Dentistry—then, if your means will allow it, and not till then, take the membership, or, better still, the fellowship of your College; and, whether you obtain a second qualification or not, keep yourself well acquainted with all that goes on in the great world of science, for that, in these times of great opportunity, is no more than is expected of an educated gentleman, and such may be and should be the position of the Dentist—at all events, of the Dentist of the future.

Had it not been proposed to express an opinion on the subject of registration, which is but another name for compulsory education, I

should not have ventured to occupy the time of the meeting at so great a length in discussing the education which should entitle the possessor to registration. I sincerely hope we shall, ere long, secure to our successors in the practise of this most useful calling an ample education. But Scotland and Ireland must help England in the effort. Success cannot be gained single handed by either country. Before the three, acting in cordial co-operation, all difficulties will disappear. When the title of Dentist is made to signify a properly educated practitioner we shall no longer hear of Dentists who are ashamed of their calling at home, and who shrink from speaking of their occupation when abroad. Nothing less than an Act of Parliament will give us the needed powers, and, so soon as the proposed Act becomes law, Dental schools will, I venture to predict, rise up in many of our greatest cities which are provided with medical schools; and Edinburgh, from times long past, famed for its educational resources, will not be the last to educate efficiently our northern Dental practitioners.

The CHAIRMAN then said: Gentlemen, I have a programme of business placed before me, consisting of a series of resolutions, with which, I believe, you are well acquainted, and which will be proposed and discussed in the usual manner.

Letters of apology expressing sympathy with the movement were intimated from Mr. Thomson, Dublin; Mr. Lee Rymer, Croydon; Mr. Woodhouse, Dublin; Mr. Brookhouse, Manchester; Mr. Orphoot, Edinburgh; Mr. Cox, Preston; Mr. Fox, London; Mr. Wormald, Bury; Mr. Demant, Brighton; Mr. Caskie, Largs; Mr. Underwood, London; Mr. Donaldson, Dundee; and Mr. C. G. De Lessert, Wolverhampton.

Dr. ROBERTS, Edinburgh, said: The resolution I have the pleasure of placing before you, Mr. President and gentlemen, is one that speaks for itself, and, therefore, requires little to be said in its favour. The resolution is the first—"That this meeting views with satisfaction the efforts which are being made to unite the Dental profession under one common designation, and to give the profession a definite legal position." I trust, Mr. President, I may not be looked upon as an egotist while I refer to my own doings during a lengthened practice. I have had several young men as pupils, and I ever urged upon them the importance of having a qualification to give them a legal position while they practised Dentistry. Several of these gentlemen followed my advice, and took the double qualification of this University, and are in excellent practice in various parts of the world as Dentists. Two of my sons also obtained this double qualification, combined with the profession of Dentist. This was before we had a "Dental Diploma" in London. Since the establishment of that degree, I have four young gentlemen who have that degree, and are also in good practice as Dentists in this country. I mention this merely

to show my feelings for the profession with regard to young men having a legal qualification and definite position as Dentists. I, therefore, trust, Mr. President, from the description which must follow the bringing forward of the various resolutions on the billet before us, such further progress will be made that, ere long, we shall have a Dental Diploma issued from the Royal College of Surgeons here, as also in Dublin. I know several cases of young men being anxious to qualify themselves as "Dental Surgeons" by possessing a Diploma, but, from the expense of both time and money, they have not the opportunity of residing in London, where that Diploma, as yet, is only to be obtained. If we succeed in our efforts, I feel certain many young men would gratefully take the opportunity of obtaining a legal qualification as "Dental Surgeon." I look upon this resolution, therefore, Mr. President, as the thin end of the wedge of this meeting, which, being well driven home by thoughtful discussion, may, along with the other resolutions before us, lead to greater results, greater than have ever been affected—resulting in registration and compulsory education, thus giving the Dentist one common designation, and the profession a definite position. I will only add, gentlemen, the expression of my own feelings, and, I am sure, that of every gentleman present, as being of intense satisfaction at the progress we have made in our object. It has been like the resistless tidal wave—slow it may be, but sure. In conclusion, gentlemen, I am sure you will agree with me in expressions of gratitude to those gentlemen who have laboured so hard for the good cause, viz.: "To unite the Dental profession under one common designation, and to give the profession a legal position." Among those gentlemen who have done so much for it, none have surpassed in zeal our respected chairman himself, who, as you all know, has undertaken a long journey to preside at this conference. I have much pleasure, Mr. President, in laying this resolution before the meeting.

Mr. J. LAWS (Hon. Sec. to the Manchester Diploma Committee), Bolton, said: Mr. Chairman and gentlemen, there are two things which combine to make this meeting of an extremely gratifying and encouraging character to my fellow-secretary, Mr. Rogers, and myself. The first is, sir, that although you were unable to be with us at our last meeting held in Birmingham, we have the honour of being graced with your presence in the chair to-day, thereby testifying that you, whom we to a man revere and honour as the father of our profession, desire our success. The second is, that of all the meetings which have been held (and this makes the fifth), each one in succession has been more successful than its predecessor. I say this makes the fifth, for of course, gentlemen, you are all aware that this meeting is one of the series arranged for by the Dental Diploma Committee elected in Manchester in

May last. I am conscious that it has been the aim of certain parties to make out that the movements in England and Scotland were distinct and different. But I trust there is not one in this room who needs to be assured that such is not the case, but that this meeting has resulted from the suggestion and decision of the committee alluded to. When that committee was appointed, at its first meeting it was decided that the entire movement should be carried out on a thoroughly broad and national basis. Hence these meetings which have been held in the different centres of the kingdom, and of which this is the fifth, though not yet, I hope, the last. Our policy throughout has been, and will be, based upon liberal principles. That both our object, and the plan we are adopting to obtain it, are approved of, each meeting we have held will testify. Wherever we have yet gone our gatherings have been most hearty and unanimous, and I feel most confident that our object will be gained at no distant date. It cannot be denied, and it is not denied, that it is both unjust and injurious to our profession that nearly a thousand reputable and qualified, but non-diplomaed, dentists, should be denied the privilege of openly proving their ability to practise their profession, and of obtaining a certificate to that effect from a recognised examining board. Instead of hindering, gentlemen, I believe (and I am not alone in that belief) that there is nothing that would more tend to hasten and lighten the work of the Registration Committee. It has been my duty and privilege, as one of the secretaries to the Diploma Committee, to have the entire correspondence of this movement in England pass through my hands. It has been no light work, I assure you. During the four months the committee has existed, I have received and answered very considerably over a hundred letters from dentists in all parts of the kingdom. Out of the entire number, I think, I have only received five which could be said to disapprove of our movement, and on inquiry I have found them to emanate from gentlemen to whom we should be very much inclined to grudge the title of "reputable dentist." Such a testimony as that, gentlemen, is to me a sufficient proof that these efforts are not unappreciated, and is an encouragement to renewed and increased energy and determination to proceed until victory is ours, and the profession shall have no grievance, and justice shall be meted out even-handed. Give the non-diplomaed men a fair opportunity of stepping on to the higher platform of the diplomaed, and you will find that they will be an honour and a credit to the title, and dentistry will be able to present a solid and compact front to the world. I have great pleasure in seconding the motion.

Mr. SYDNEY WORMALD, Stockport, said:—Mr. Chairman and Gentlemen, having taken part in previous meetings, I shall deem that a sufficient excuse for my being very brief. It has been my

pleasure to attend every meeting which has been held for the purpose of advocating Dental Reform by registration and compulsory education, and to discuss the importance and desirability of inducing the Royal College of Surgeons of Ireland and Scotland to institute a Dental Diploma. But I have not attended any meeting which has given me more pleasure and greater satisfaction than the one at which I am now present—pleasure because of the association and friendly interchange of sentiments which this meeting is calculated to afford, and satisfaction because of the marked progress which it demonstrates. This large gathering of gentlemen here to-day, met in conference to discuss these questions, shows to my mind the marked advance in the right direction. We have gentlemen here from long distances, from various parts of the United Kingdom, and who I think may be taken as a fair representation of the whole profession. However we may differ on minor points, we must agree to the fact that the Dental profession is in a most unsatisfactory state, and that a great effort is required to improve and raise it to a higher and more satisfactory position. I think the usefulness, and the advantages which the Dental profession afford to society claim for it a higher standard, and a legally recognised position, for the protection of the public. If we accept the fact that an effort ought to be made for the purpose of obtaining so desirable an object, I think it would be well to make this effort in the broad and liberal spirit with a view to unite and satisfy the profession generally. Efforts have been, and are being put forth, and our object here to-day is to increase those efforts. When we look back upon the past, and compare it with the present, I feel there is good reason for united congratulation. We have the satisfaction before us to-day, in this conference, to know that the past efforts put forth are being realized and accepted. The importance of the object, and the justice of the cause we have met to discuss to-day is sufficient to enlist and encourage every well-wisher of his profession to put forth an effort to assist the Committees in the accomplishment of the work they have in hand. History will record the fact that to-day the profession has the highest possible compliment conferred upon it, in having the honour of John Tomes, Esq., F.R.S., to preside at this conference. I have great pleasure in supporting the resolution.

Dr. W. H. WAITE, Liverpool, said:—Whatever may be the fate of the other resolutions drafted from this conference, I am very sure the first will be carried by acclamation. Although we hail from different parts of the United Kingdom, and represent diverse opinions in relation to the advancement of our profession,—although we may regard the efforts that are being made with very different and perhaps opposite feelings, still I do honestly believe that every man of us, up to the full measure of the ex-

perience and knowledge he possesses, is sincerely anxious to see our profession raised to the position to which it is fairly entitled. With the exception of what took place about the year 1859, nothing has transpired of such immense significance to us, as the two movements known as the "Registration Scheme" and the "Diploma Question" which have assumed a practical shape under the stimulating influence of the Manchester meeting of 1875. I could almost wish this resolution had been so worded as to make mention of that meeting, because when the history of present efforts comes to be written, it will be seen very plainly how the Dental Profession then took a new point of departure. If we look back for a moment to the condition of things prior to that meeting, and consider the isolation, the lethargy—I had almost said the sullen, indifference then existing—we cannot but think that the activity of discussion and labour which has followed is infinitely to be preferred. The speakers who have charge of the second resolution will be able to dwell upon the subject of Registration and Compulsory Education; you will therefore permit me to say just a word about the Diploma Movement. There is a correlation between these two efforts which ought to be understood. The Registration Scheme is designed to make education and qualification the highway to practice, and the attainment of public favour; while the Diploma Movement is based upon the converse proposition, viz., that successful and respectable practice with the enjoyment of a fair share of public appreciation ought, under existing circumstances, to furnish a title to qualification. I use the word in its technical sense. The education of experience in a profession like ours is at least as valuable as the training of the schools, and the claim of the Manchester Committee is that the former should be recognised and accredited for the past, while we insist upon the latter in times to come. This claim is set up, as the resolution most aptly expresses it, to unite the profession under one common designation, and to give the profession a definite legal position; and it is my deliberate conviction, that until this claim is freely admitted and provided for, other efforts to unite the profession will fail to accomplish that most desirable purpose. The unity to be sought is not a mere external form, but a cordial fraternal unity. This is simply impracticable until every reputable practitioner in the country is set free, or at any rate has the opportunity to become free of the disabilities which now encumber the majority. There are throughout Great Britain hundreds practising our speciality, who, by reason of the skill, knowledge, and social position they have acquired, would reflect honour upon any college which might number them among its alumni. Others there are fighting their way bravely against tremendous odds, striving to uphold the probity and dignity of professional character. The battle they are waging with ignorance and quackery, at much

personal sacrifice, ought to be recognised ; and the help and encouragement a qualification would give ought not to be withheld. The college which opens its doors wide to such men will not injure itself, but will confer a substantial benefit upon our profession and the public. Although the atmosphere at present is thick with the smoke of conflicting opinions, and sometimes angry discussions, one would fain hope that in the not distant future there may come a time of peace, unity, and satisfaction ; when we all, being delivered from the wearing and engrossing responsibilities of political activity, may be able to devote ourselves to the more peaceful avocations of scientific research, and the intelligent and skilful exercise of our useful and honourable calling. That time will not arrive as the product of any sort of restriction, or partial efforts, but only when we determine to adopt towards each other a generous, conciliatory and noble policy, seeking thus to illustrate the eternal principle—"Whatsoever ye would that men should do unto you do ye even so to them."

Mr. R. ROGERS, Cheltenham, said : Mr. Chairman and gentlemen, I feel very great pleasure in supporting the resolution proposed so ably by Dr. Roberts, and seconded by my brother secretary, Mr. Laws, because I heartily approve of the two movements now agitating the profession. As a provincial practitioner of some 19 years' standing, I feel that both are essential to the future unity of the profession ; and I hope, ere long, to see both movements crowned with the success they so richly deserve. Until a few months ago, I took very little interest in Dental movements or Dental politics ; and why ? Simply because I felt that we provincial men have very little chance of competing against our London brethren, they having advantages far beyond our reach. Of course, I allude principally to the monthly meetings of the Odontological and other Societies, where they can discuss and arrive at each other's ideas, not only for their own benefit, but for the benefit of their brother practitioners in town. From what I read in the leading Dental Journals of the present day, I feel confident that, if we will only work together in this matter, we must do what every gentleman present desires to do—that is, eventually to elevate the status of the profession to which we belong. As many of my professional friends may credit me with being antagonistic to the registration and Dental reform scheme, allow me here to say that no one is more anxious for it than myself ; but, in conclusion, let me also say that, if we gain the registration scheme first, I sincerely hope that arrangements will be made for those gentlemen, who have been for many years carrying on their profession as true and honourable men should do, to obtain a qualification, but who, from diffidence or unforeseen circumstances, have hitherto neglected to do so.

Mr. HARRISON, Sheffield : The object of this motion is to raise

the profession to a definite legal position, and I support it with all my heart.

Mr. PIERREPOINT, Manchester: I sincerely hope that the registration and diploma system will be carried out for the good of the profession and of the public in general, and I have much pleasure in supporting the motion.

The motion was then put to the meeting and unanimously adopted.

Mr. CAMPBELL, Glasgow, then said: It is with infinite pleasure that I move the second resolution, which refers to registration and compulsory education. In its present form it seems to me it can hardly fail to be acceptable to every one who has Dental Reform at heart. That there will be differences of opinion, and these strongly expressed, too, before the resolution has finally passed the Reform Committee, and been submitted to the Medical Council for their approval, I have little doubt. But while it is good to have every shade of opinion freely expressed at meetings like the present, as well as at meetings of committee, surely, gentlemen, the time has now arrived when there ought to be an immediate and general concession of opinion on all minor points connected with Dental Reform. We must make a big effort to attain that unity which can alone promote the object which we have so much at heart. It is our imperative duty to obtain registration, not only for our own good, but for the protection of the public, who are preyed upon so largely by so many unscrupulous quacks. The leading features of any Bill which may be passed to regulate dental practice must be registration and compulsory education. At this time of day, when even the education of the masses is compulsory, there cannot be a doubt that dental education ought to be compulsory; but with regard to registration I admit that there is room for a difference of opinion. After two or three years' discussions, it is now very generally admitted that before we can obtain registration, it must be open to all, and this to many is a bitter pill to swallow. It is not possible to frame a bill which will effectually eradicate or prevent empiricism in the dental or any other profession. Still registration and compulsory education will materially assist in keeping it in check, as none but those registered, and after a certain data none will be put on the register except those holding the recognised Dental Diploma, will be able to recover fees in any Court for Dental operations, which means, in other words, if Dental operations are done by men having no qualifications, they must at least satisfy their patients, otherwise they may receive no remuneration. I have known many persons who might have justly refused payment for work inefficiently done had this law been in force. Just one word more to express how thoroughly I am at one with our most

respected chairman in connection with Dental Education and Registration, that none should be admitted to the profession except such as have been prepared for it specially. I have also brought this subject before several of my medical friends, and they agree with me that the surgical Diploma does not qualify its possessor to practice as a dental surgeon. I mean more—"That we are of opinion that nothing but registration and compulsory education will bring Dentistry into a true professional position and afford the public that amount of protection which it has a right to expect in all professional matters."

Dr. J. A. ROBERTSON, Cupar-Fife: I beg to second the resolution proposed by Mr. Campbell. It gives me very great pleasure indeed to see such a large meeting of our brethren here in Scotland. I am an old Dental graduate—possibly the oldest Dental graduate in the room. I have been in the battle on the other side of the Atlantic, and have smelt the powder. I have taken a part in the movements there for the furtherance of Dental Reform, and anyone who reads "Cosmos" will see what has been achieved. The profession now stands there very much better than when I left that country. They have an enactment, in all the old States at least, to the effect that no Dentist can practice unless he is properly qualified, and it is a matter of great satisfaction to the public that they can go anywhere now for a Dentist without being annoyed or maltreated by quacks. I confess that I am glad to see this movement carried on on so broad a basis, and taking in as large a number as possible. A great many, as several gentlemen have expressed it to-night, have had a good deal of experience in the profession for many years, and a good many to whom study would now be very irksome; but I have not the least doubt that, whether it might be the College of Surgeons in Edinburgh, England or Ireland, any reputable Dentist, after the passing of any Act, would not find his examination too severe; and that it would be in the power of any reputable Dentist to present himself and undergo the examination to fit him to be put on the register. Our glorious profession—for I do not hesitate to call it so—is now beginning to take a stand, and I rejoice in it. I rejoice to think that, after we have been so long, as it were, grovelling in the mire, as was remarked by a gentleman, the thin end of the wedge has been inserted. The battle has commenced, and it is bound to go on; and, if we are to true to ourselves, there is not the least doubt but that we shall soon be successful in our efforts. There have been a great many remarks made by previous speakers which I cordially endorse, and I shall be happy to do anything that I can to promote the movement. I have much pleasure in seconding the motion.

The CHAIRMAN: I hope that there will be free discussion of the motion. I would be sorry if there was any desire to suppress dis-

cussion, but at the same time we must proceed with our discussions in a business like manner.

Mr. F. HURT, Manchester, said:—I cannot but express my delight to see such a large and influential meeting. I think it would be presumptuous if I were to stand up on this occasion as being the prime mover in this matter, because I look upon the Chairman, and many other gentlemen who have been associated with him, as having been engaged in dental reform for twenty-five years. But you will not, perhaps, think it presumptuous if I should say that myself and friend, Mr. Sidney Wormald, were the first two gentlemen to come to the front and express a desire to ascertain the feeling of the profession, and that it was through us that a circular was sent out to the profession, calling the meeting in Manchester. It is a source of great pleasure to think that since that meeting, held, I think, on the 30th of August, 1875, we have ever since had meetings which have been the means of, as it were, pushing forward the matter towards a glorious end. Compulsory education and registration are what is really required, and if we get that, I feel that there will not be a medical school in the United Kingdom but that will have a Dental department connected therewith. That being the case, there will be a large number of students, and it will be found desirable by the Colleges, not only of England and Ireland, but of Edinburgh, to grant diplomas and receive students ready to go through the proper examination. I have great pleasure in supporting the motion.

Mr. J. A. ROBERTSON, B.A., (Oxon) Glasgow, said—I have much pleasure in supporting the second resolution, but there is one thing I would like to ask in regard to it. One gentleman who spoke said, that examination was to include all existing dentists. Now of course such a thing I think is desirable, that all existing dentists should be registered. But I would beg to ask what would you mean to do with compulsory education? Does it refer to existing dentists or to those who are to come?

The CHAIRMAN—All those who are to come.

Mr. ROBERTSON—Thank you. With regard to existing dentists taking the diploma, may I ask if it is possible for existing practitioners to take this diploma within a certain number of years, and that the diploma should be open to all practitioners to take, that every one should be able to take it by undergoing a certain amount of study and cultivating himself. I think there are many who would avail themselves of the opportunity of taking a diploma, men who have had very few opportunities of educating themselves except in their special knowledge of dentistry, and there are qualified dentists who would be glad to have an opportunity of taking the Dental Diploma.

The CHAIRMAN said, the last speaker asked whether the registration movement and the compulsory education applied to existing

dentists. By no possible means could you pass a general law which would exclude all the present dentists. You might as well try to fly through the House of Commons, as to induce the members to pass a measure which would inflict such material injury on existing men as to exclude them from registration. Therefore the members of the profession may be satisfied that it would be impossible to exclude them. I think we ought to get registration first, and we can only get it by inducing the colleges of Scotland and Ireland to take powers similar to those in England; and in inducing these bodies to take that power, the rules of admission must be discussed. But I do not think that we have to do with that at present. My view of this meeting is, that it is not so much a continuation of meetings partial in their purpose, as the necessary outcome of a course of study pursued by dentists for twenty years. The meeting has happened here on a particular day, but if men established a school and made useful practitioners, sooner or later this kind of discussion must have come about, and what was one time partial must come to be universal. Therefore I regard this meeting as an outcome of steady perseverance in the education of dentists.

Mr. CRAPPEN said: It gives me very much pleasure to see so many taking an active part in what concerns the welfare of our profession. I do not think that we can do better than continue the same course.

The motion was unanimously agreed to.

Mr. HEPBURN (Edinburgh) said: Before reading the resolution I have to propose, I would simply express the very great satisfaction it gives me to see so many members of our profession here to-day. Such a sight is, indeed, gladsome to our eyes and ears, and I simply bid the strangers all welcome. Many are, no doubt, here for the first time, and I trust it will not be the last. I will now read the resolution which has been placed in my hands for your acceptance—"That it is inexpedient to exact from dental students a greater expenditure of time and money than is necessary for their education as dentists, and we consider the curriculum and examination required by the Royal College of Surgeons of England meets the requirements of dental surgery." It seems to me almost superfluous to say anything in support of this resolution, it so commends itself to our common sense as being in accord with the fitness of things, recognizing as it does the adaptation of means to the end, and the value of that diploma which is the ground of triumph to you and those gentlemen who so earnestly labour for dental reform, and to rescue the profession from the anomalous position in which it stood, and in which, to a certain extent, it still stands. In regard to the first proposal contained in the resolution, "that it is inexpedient to exact from dental students a greater expenditure of time and money than is necessary for their

education as dentists," I can only say that it seems to me not only inexpedient, but simply absurd, to demand from the dental student that which you would not exact from the student of any other profession. You ask him to seek by a roundabout process a knowledge of his profession which he can gain much more readily by going direct to it, and in a more simple way. It seems to me just the same as if a man who had business to transact in London were to go along by Inverness, simply because it might be the means of expanding his knowledge of the geography of the country, and of the people who lived there. Now, any man who had business to transact in London would find out the quickest means of doing so. He would go by the Flying Scotchman, transact his business, and, when he had done, he might exercise his mind on something which might improve it or instruct him in any way. No man who has a race to run will encumber himself with the armour of the fighting man. He will throw over every impediment, so that he may the easier attain the goal of his desire. But come nearer home. We would never for a moment dream of asking a student intended for the Bar or the Church to go through our dental curriculum, although we might believe he would in doing so gain a large amount of knowledge, and learn many things that would be useful to him, whatever sphere he might fill. The end which we have in view in this educational course is to make a dentist, and a competent one; and, in order to do so, we are bound to take the nearest and most direct road in order to obtain that end. But it takes a larger expenditure, both in time and money, to obtain this degree than any purely medical or surgical one. To increase that would simply have the effect of stopping the movement that we so much desire to advance. It is a law in political economy, I believe, that if you raise the price of production the product will cease to be in demand, and I believe that this will tell in the matter of dental students. If you make the cost of attaining to that position too high, the proper dental students will be very few indeed. The second part of the resolution goes on to say, "and we consider the curriculum and examination required by the Royal College of Surgeons of England meets the requirements of dental surgery." I need not, I think, repeat or read extracts from that curriculum. We are all conversant with its requirements, and it seems to me to contain all that is essential for educating the dental student for any of the requirements of his profession, and having added to it now the preliminary examination, I think it embraces all that could be desired, or is desirable, for making the student perfect in the knowledge of his profession. Followed as this curriculum is by an examination conducted by the leading and representative men of the profession, I think it combines everything that it is possible to desire for carrying out the object we have in

view. If there were the possibility of attaining the same end by a shorter route, I would say let us decidedly go that way, but until such a way can be shown, I do not think we can do better than go the way we are going, and I hope that we will go through it successfully. I do not know that there is anything further that I can advance in support of this motion. I can simply say it gives me very great pleasure to propose it, and I trust that a very great number of gentlemen here will still see their way to go on and get the diploma. It seems there has been a great cry over the country, and a feeling that those connected with the English College of Surgeons were averse to them, and were putting stumblingblocks in their way. I think that is entirely wrong, and I never heard any such feeling expressed by any connected with the College of Surgeons. I trust to see the day when such a school as there is in London will be established here, and also in many other cities.

Mr. BROWNLEE, Glasgow, said: The resolution now under consideration deals with two aspects of the education question. It affirms that it is inexpedient to close the entrance to the profession by insisting on more study than is necessary, and it points to an example of a curriculum which, in the opinion of those who framed these resolutions, is quite sufficient for the purpose. With regard to the latter part of the resolution, it will rest chiefly, I believe, with the College at whose doors we may apply to say on what terms a Diploma in Dental Surgery will be granted. But as an L.D.S. after curriculum, I feel constrained to take advantage of this, as of every other, opportunity of expressing my firm belief in the course of study for Dental Students, the training pointed to in the resolution; different opinions are entertained in regard to the Diploma to which it leads, but I know of no objections which have been urged against the curriculum itself. It has existed now for eighteen years, and it seems to be still in favour with all parties. Members of the Society of Surgeons practising Dentistry are amongst the teachers. Men who seek no Diploma at all would fain be amongst the students of it. And in the event of our going on with the purpose in hand, we have a definite course of study to propose, and one which will carry with it the respect and deference due to an educational measure of the R.C.S.E. By the former part of the resolution we are brought to the consideration of the two schemes now in existence, which have for their object the raising of our *status* as a profession. The form of the resolution pre-supposes an acquaintance with the whole subject, and we are called upon in the exercise of a choice to express our preference. As far as I have been able to comprehend the position of parties, our choice lies between a scheme of education which has for its primary idea the obtaining of a legal qualification at the close of his student career; and on the other a scheme of education, the primary idea of which is to fit a man for the cases to which his

after life is to be devoted—a scheme, this, which does not yet lead up to a legal standing, but which recognises a movement having this end in view. Both schemes have their weak points, but they differ in this—that the one may be mended, the other seems to me to be pre-eminently deficient. To take a moderate view of the present state of matters, the education scheme of the L.D.S. may be improved by registration and compulsory education, if, indeed, this ought not to be described as a part of it, but unless the Dental Curriculum be added to the course of study required for a general medical qualification, a man might become legally qualified to practise an art of which he knew little or nothing. If we have regard to the time and means at the disposal of the great majority of men entering the profession, we can have no hope of benefitting it by the institution of a double curriculum. The course of study required for one who seeks to qualify for the practice of surgery can hardly be esteemed a fit training for a dentist, and to insist upon the double curriculum, would be to raise an obstacle which few indeed would care to surmount. A scheme of education to be successful must be within the reach of the bulk of those entering the profession, and must offer to the student some equivalent for the time and trouble and money spent upon it. This the existing curriculum for the L.D.S. does ; and it is to be hoped that this meeting will vote for a curriculum which embraces all that can with justice be required from those seeking to qualify for the practice of dentistry. No one will understand me as making light of or undervaluing the training of the surgeon, but that training was instituted to fit him for his own work, not ours, and I have to ask you to declare your belief that our profession is deserving of a special course of training of its own, by passing this third resolution, which I have the pleasure of seconding.

Dr. J. SMITH (Edinburgh) said : I have to correct a slight mistake which has crept into the Dental Journals, so far as my name is connected with this meeting, and which places me in a somewhat awkward and erroneous position. I have no new scheme to propose. I have only to express my opinion on the schemes that have been already proposed, and my views on these are now pretty well known in reference to this matter. In many of the meetings, such as the present, there has been, perhaps, too much tendency to exaggerate the importance of dentistry—to advance abstract ideas of dental reform—to interchange compliments with those who have laudably done much to promote its advent—to congratulate ourselves on the prospect of its near approach, and thus to wind up the proceedings—instead of offering any exact and lucid outline—some particular plan of an equitable and comprehensive nature—by which such benefits could be conferred on the profession. What,

I think, is now required is to advance some scheme of education and qualification which could be laid in a tangible form before such a body as the Edinburgh College of Surgeons. I am aware that difficulties are here presented with which we have to contend. But since the original resolutions were first promulgated by the Reform Committee, many modifications have been made, the matter has assumed a more workable aspect, and much that might have been considered objectionable then has been removed. As it appears that I was expected to say something on such subjects, it will perhaps be better, for the sake of brevity, that I should here take an opportunity of making some suggestions on the regulations of the practice of dentistry, and the registration of dental practitioners in Scotland, in accordance with what is contained in the draft suggestions placed in the hands of the committee. And I may mention that I do so disinterestedly and impartially, as I am in a position to be so far indifferent—personally speaking—to their being adopted or not.

Dr. Smith then submitted to the meeting the following Draft Suggestions:—The principal matter to be considered on this occasion appears to be, in what manner and terms a representation is to be made by the Dental Profession in Scotland to the Royal College of Surgeons of Edinburgh, with the object of inducing that body to institute a Special Examination in Dentistry—to appoint a selected Board of Examiners for this purpose—and to grant, or acquire the power to grant, a new diploma or licence qualifying for an exclusive right of designation and of practise in this particular and limited branch of surgery.

In doing so, there ought to be submitted, for the consideration of the College, the grounds for such a request; the exact nature and extent of the education proposed for Dentists; the examination considered competent; the qualifications or diplomas desirable; and the conditions under which we should expect the Registration of such Dental graduates to be conceded.

In approaching the Royal College of Surgeons of Edinburgh, with a view to negotiating as to that body obtaining powers to grant a Dental Diploma, it must be remembered that something of this nature was done by myself so far back as during the Presidency of Dr Omond in 1858, and before the Dental Charter of the Royal College of Surgeons of England was in existence. I was then met by the statement, that the College of Surgeons of Edinburgh had always held (and I entirely agree with the opinion), that whatever specialty be adopted as a line of practise, it was desirable and more expedient that its practitioner, should be a fully qualified medical man. It was admitted as quite possible that a practitioner, in certain specialties, might excel in them, without being a fully qualified surgeon or physician—but *cæteris paribus*, that the latter principle was the correct one. Such were the views of the Edinburgh College, and the close approach to the full curriculum, imperative in its Dental Examination, shows that the Royal College of Surgeons of England is very nearly of the same opinion. I am in a position to say, however, that the Edinburgh College of Surgeons may possibly, and before long, have this matter again submitted for its consideration; and I therefore think it might be premature in the

committee mentioned in the billets to suggest, before that time, to the College its obtaining powers to confer this service upon Dentists, as it possibly might be neither more nor less than asking it to incur the expense of a new Charter and Act of Parliament, in addition to the time and trouble of so doing. This had better then be deferred, especially as the proposed new Dental Bill may reasonably be expected to confer such powers on the colleges and other corporations.

Meantime, the proposal most likely to be accepted by the College for its consideration, supposing that the power were accorded to adopt it, would be, I incline to think, that a conjoint-board from among its own Examiners, and from the Dental practitioners of Edinburgh, should be appointed—and that a Dental Examination, divided as in the case of the Surgical Examination, into a first and second part, should be conducted by them in the case of students who had previously obtained, as in the case of the Midwifery Diploma, the full surgical qualification conferred by the College—and that the passing of this examination should confer on those obtaining it the designation of *Surgeon-Dentist*, or *Dental-Surgeon*, with all the privileges of practising as such. That while passing this major Dental Examination should confer such exclusive right to the designation of *Surgeon-Dentist* or *Dental-Surgeon*, and to all the rights of licentiates of the College, and to the privileges of dental practice besides, powers should be reserved that the same Board of Examiners might be recognised by the College as authorised and competent to examine for, and grant a *minor* Dental Diploma after a minor curriculum of study—should such be instituted by the Edinburgh College, and similar to the Dental Examination and Certificate of the College of Surgeons of England. Further, that in the meantime, the first part of the above Dental Examination being passed, should not only entitle the candidate to come up at a stated period thereafter for the second part, but should; in the interim, entitle him to the designation of *Dentist*, and to practise as such, under the conditions and restrictions to be noticed immediately.

Thus the granting of the major Dental Qualification would be the main object and duty of the Board of Examiners, but it would be no violation of, nor inconsistent with the principles of the College, to recognise the first examination as conferring certain subordinate and restricted privileges.

What comes to be discussed then, in respect to such a proposal, is—

- 1st, The Education of Dentists
- 2nd, Their Examination and Degrees.
- 3rd, The Question of Registration.

And as bearing upon what has been already suggested, I would very shortly advert to each of these subjects.

With reference to the education of dentists, although a full surgical education and qualifications are, I believe, as necessary in the treatment of dental disease, as for that of any other localised morbid affection, yet I admit that difficulties exist in carrying out this principle, owing to the combination of mechanical with surgical work required of the dentist, since, say what we may, unless the mechanical be separated from the surgical department, as in the case of opticians and oculists, the dentist is, in a certain sense, a tradesman dependent upon mechanical work, as well as his skill as a professional man.

I have already, in letters and in other ways, pointed out difficulties

thus attaching to any scheme of *compulsory* education proposed to be *universally* enforced, unless it were of a minimum character, and that as low as could possibly be admitted. We may institute what higher systems of education and higher qualifications we please, but these would require to be left to the *option* of candidates, since to render them imperative would be not only oppressive, but impracticable, while dentistry maintains the double character I have described it to possess.

It is practically impossible, under the present circumstances of dentistry, for students or assistants serving their apprenticeship in remote parts of Scotland, to attend a curriculum which must, of necessity, be prescribed as unavoidable, for obtaining anything like the higher qualifications.

There is no disguising the fact that many Dental workmen and mechanical assistants have not the means, even if they had the opportunity, of attending in some large city, a Dental or a Medical school. It is not generally among such classes as can afford the necessary time and money for such purposes, that we find our workmen; and I venture to predict it never will be. It may be said, as has been said, Let those workmen who are thus situated remain workmen to the end. But the result of this, I fear, would be that, without the prospect of some day practising on their own account, few of the class of workmen we desire would enter the profession at all, and if they did, I doubt much if the amount of irregular practice would thus be diminished, while in all probability the mechanical and surgical branches would become separate callings in the end.

I am not upholding or approving of a low standard of education or of fractional qualifications. But I think it only fair that the interests of a class long likely to be found in the ranks of dentistry, and from among whom some good dentists in their day have emanated, ought not to be unscrupulously set aside: and I think the arrangement I would suggest is one likely to meet all their requirements.

It is with these views, then, I have proposed that the examinations for fitness to practice dentistry should be divided into—

- 1st, The Preliminary Literary Examination.
- 2nd, A First Professional Examination.
- 3rd, A Second Professional Examination.

The nature and extent of each of these should be exactly defined and understood before granting or accepting the powers of any body to confer or withhold qualifications.

The preliminary examination is all important, and it is questionable whether it should not be undergone before admission as a workman, apprentice, or assistant, since more time would thus be afforded for the necessary preparations.

The first professional examination should embrace all the technicalities of dentistry, and all the essential manipulations and mechanical procedure required; and as already suggested, should, on its being passed, entitle to practise under the designation of "Dentist," as well as entitle the candidate to present himself for the higher qualification.

For neither the preliminary nor the first professional examination, should any prescribed classes or attendance thereon be required, but simply that the candidate's knowledge and information be thoroughly tested and ascertained. But in all cases, before applying for admission to the *first professional* examination, the candidate should be required to

produce evidence of a certain term of apprenticeship in a recognised workshop, and of a certain term of attendance on a Dental Dispensary, or on the Dental practice of a recognised hospital or practitioner.

The second professional examination would again be for the complete Dental qualification, always along with the full surgical qualification, as the major Dental Degree in Edinburgh, and without the full surgical degree, where such Dental qualification is already obtainable, or where such may yet be instituted. In all cases the first professional Dental Examination should require to have been passed a certain number of months previously; the passing of which first professional Dental Examination, whether at the College of Surgeons of Edinburgh or England, or any other Board, should be considered as equivalent to any other examination in the same departments; and should exempt candidates from further examination on the subjects it includes.

This second examination, then as has been already laid down, passed in the case of those holding also the full surgical qualification, should confer the right to the designation of Surgeon-Dentist or Dental-Surgeon; and those having so passed, should be entitled to teach the subjects of Dental Surgery, Anatomy, or Physiology, or to hold appointments as Dental Surgeons in hospitals or dispensaries.

Again, those who have only passed the first professional Dental Examination, should be entitled to the designation of "Dentists," without any affix, or letters, or other additions to the title whatever, and should be permitted to practise as Dentists, but not to prescribe for or consult in the medical treatment of Dental cases, or to administer anaesthetics.

And those passing the second, or an equivalent examination, without being Surgeons, in the event of such a diploma being instituted in Edinburgh, should be called *graduates* in Dentistry of the Royal College of Surgeons, Edinburgh—"Licentiate" being less expedient in Edinburgh, as meaning a Member of the College.

Regarding the establishment of a Dental school in any provincial town, on a footing to compete with that of London, seems an impracticable matter, and I do not speak without authority or experience in the matter, having, some time back, lectured on Dental Surgery for seven years at the Royal College of Surgeons. To be effective, it would require to be on much the same principle, and on an extensive scale. But the number of students existing would not support this; while it is well proved that the present provincial Dental dispensaries and hospitals are neither supported with the subscriptions, nor are they attended by the number of patients which would be required to supplement an undertaking of so complete a nature.

It will be seen, however, that by the plan proposed for the first examination, the necessity for certain classes would be obviated; while those lectures demanded for the more special subjects of the second, namely Dental Anatomy and Physiology, and Dental Surgery, could be maintained by being open at any medical school, or hospital, or dispensary, with the other medical classes, to both dental and medical students—and even a scale of fees could be arranged, which would, at a diminished rate, qualify exclusively for the Dental examination—the full fee being required to constitute the recognition of such classes, where the full Surgical Diploma was desired to be obtained.

It seems unnecessary to say much on the subject of Registration, as

its expediency and necessity are admitted on all hands. Indeed, without it any such examination or qualifications as have been referred to would be to a great extent worthless, as no check could in that case be put upon irregular practice.

The Register should be a separate and distinct Register of Dentists, altogether apart from the Medical Register, in the same manner as the Register of the Pharmaceutical chemists and druggists is maintained.

There is no absolute necessity for, and no advantage in dentists being mixed up with medical practitioners, or tacked on as an appendix to their Register. And it might save a world of trouble in seeking admission there, simply to have a Dental Register for themselves—and which, at the same time, might be kept by the Medical Registrar, in addition to the Register of medical men of which he has the charge.

There is in the billet something like a proposal to level the whole "Dental Profession under one common designation." This would be not only impracticable, but would be unparalleled in any other Register of the kind. In the Pharmaceutical Register, those possessing the higher qualification are alphabetically arranged first. Those possessing the lesser qualification come next, and with them the names of the first group are again entered—the whole being in alphabetical arrangement.

This plan could be adopted in the Dental Register to a certain extent, by arranging first those who have full medical or surgical qualifications in alphabetical order; next those who have the London Dental licence, or are Dental graduates of a college or other recognised body; and, lastly, those who have passed the first examination of such a body, and are Dentists; those possessing any of the other qualifications in dentistry being again alphabetically arranged along with them.

Lastly, with regard to the retrospective action of such measures, all Dentists who, at the time of passing of such an Act as the Dental Bill, should be *required* to register under the heading to which their qualification entitles them; and all assistants who can prove their being so at the time of such an Act being passed, should, in the event of their afterwards going in for any of the qualifications as Dental practitioners, be exempt from the preliminary examination, and from attendance on that part of the curriculum specially required for the second examination. In other words, they would be exempt from passing the preliminary examination altogether, and would be allowed to appear for examination for both the first and second Dental Examination, on certifying their having the proper period of apprenticeship and hospital or dispensary attendance—except in such instances as those where the second Dental Examination requires candidates to possess a Surgeon's Diploma as well—in which cases the usual surgical curriculum must of course be attended.

In conclusion, I need not say that these remarks are intended to be suggestive rather than exhaustive on this question, and that I have purposely avoided going much into the details of examinations, etc., as interfering with the brevity with which I have attempted to treat the broader aspect of the subject, as those most important to be in the first place definitely arranged.

Mr. VANDERPANT said: I was so much interested in Dr. Smith's very able address that I am afraid I may not be able to explain what I wished to bring under your notice. It was with reference to something

that fell from Mr. Hepburn as to the College in England not placing any stumbling blocks in the way of those who had been in practice. Now, I think the clause with regard to advertising is something very like a stumbling block. Many men advertised without seeing the harm of it, and like myself withdrew from it, and it seems hard to that class that they should be for ever debarred for that indiscretion. I know as a fact that many of those men would be glad to come forward, were it not for the additional mortification of being snubbed a second time, as happened to myself when I sent in my papers, principally in accordance with the wish of a friend of mine who lived at Kingston-on-Thames. I stated to him that I had advertised, but he said, drop your advertising and there will be no difficulty in the matter. I sent in my papers, and I heard nothing for four months, and in the meantime I was preparing myself. Ultimately I received the mortifying information that my conduct was considered unprofessional, and that I should not be allowed to present myself as a candidate. Now I think that such objections might be waived, and that the College might afford to open its doors once more. I think that men in the circumstances I have referred to should be dealt with leniently.

The CHAIRMAN said that as regards the College of Surgeons it must be borne in mind that their powers are altogether permissive. When it becomes compulsory for every Dentist to pass the examination, probably all or many difficulties will have to be considered.

Mr. VANDERPANT: My remarks were made on account of the statements of Mr. Hepburn that he did not think that the authorities of the College had placed any stumbling block in the way of any man willing and able to qualify himself.

Dr. SMITH proposed as an amendment on the motion that the last part of it should read as follows:—"We consider the curriculum and examination required by the Royal College of Surgeons of England as one meeting the requirements of Dental Surgery."

Mr. CAMPBELL, Dundee, seconded this amendment.

The CHAIRMAN: This proposed modification makes the resolution not less strong, but more courteous.

Mr. HEPBURN: I have no objection to have the motion so worded.

The motion as altered was then agreed to.

Mr. CAMPBELL, Dundee: It seems that the quantity of matter in Dr. Smith's statements is too heavy for the time we have to consider this resolution, and I propose it should be handed to the committee on dental reform, with the request that they take it into consideration, and to make whatever use of it they think proper. There is one part of Dr. Smith's statement, where he says that "those dentists who have only passed the first dental professional examination should be entitled to the designation of dentists, without any affix or letters or other additions to the title whatever, and be permitted to practise as dentists, but not to prescribe for or counsel in the medical treatment of dental cases, or to administer anæsthetics."

Dr. SMITH: You would scarcely say that one who had been an apprentice in a workshop, or a few months in a dental dispensary, was entitled to administer anæsthetics, but would require a little more surgery for undertaking a thing like that?

Mr. CAMPBELL: That means that they should only make artificial or mechanical teeth.

Dr. SMITH : Or do anything that was not dangerous to human life.

Mr. CAMPBELL : Put in that way it certainly is stronger.

Dr. JOSEPH WALKER, London : It gives me great pleasure in meeting so many of my brother dentists here in Edinburgh to-day, and with you, I sincerely trust that the result of this conference will be two-fold—that it will lead to the formation of a thorough good Dental school, and also that you will prevail upon the authorities of the College of Surgeons of Edinburgh to apply for powers to grant a dental diploma. I will endeavour in the few remarks I have to make to confine myself closely to the suggestion thrown out in the agenda of this day's proceedings, and confine myself to broad principles. Passing then at once into the subject which concerns us all so thoroughly, I shall enquire—What is necessary for a student to undertake to make him a good dental surgeon? First, he should possess a good education, and secondly, he should serve a pupillage of three years to the mechanical department of dental surgery, and thirdly, he should go through his Dental Hospital course. The training for a student to become a good dental surgeon must be compound in its character. First, he should possess a good knowledge of mechanics, and secondly, he should possess great digital manipulation. To obtain these necessary qualifications, so far as my experience teaches me, it requires full three years of diligent work. The advantage to the student when obtained is of life-long duration. It qualifies him with the addition of experience to become a master of one department of dental surgery; it also lays the foundation of his becoming a master in the use of his operative instruments; it is a preparatory school for his future life-long work. It is also a profitable and lucrative employment. A power once possessed never to leave him again; it is the basis of his employment at all times and seasons of his career. The question which I think should now be considered by all present is whether this desideratum can be attained in less than three years. Having passed through a training similar to the one I have sketched out, backed by active practice in London for 25 years, I trust you will excuse me, sir, in giving an opinion on this point. I think so far as my own experience teaches me, that personally I was not fit to enter upon the multifarious duties of a well-appointed work-room in three years—that it required even a longer period than three years before I became a moderately fair dental mechanic. When a pupil I cannot look back and upbraid myself with many hours of idleness and leisure, and I well remember your own invention stimulated me to work hours over the ordinary 9 to 6—I mean the invention of the bone-fitting machine exhibited in the Polytechnic Institution. If I look back upon the merits and abilities of my assistants, I should learn that the most successful and gifted were those who commenced their curriculum by a pupillage of three years prior to their hospital training. On the other hand, the pupils I have permitted to commence their hospital duties in the second and third year have failed to become either good mechanics or good and skilled Dental Surgeons. Division of labour, hospital and home work, appear to undermine the healthy action of emulation. They run an unfair course at both places. It is human nature to desist from labour when we fail in obtaining good results, the student makes no real head-way at either place, and sinks into a desultory kind of work. Few young men, indeed, are there that can interest themselves in both kinds of work—handiwork and intellectual. The hospital

has far superior claims—novelty, companionship, a feeling of importance which lifts the workman into the student, and rightly so if he has accomplished his first step—and quite unfits him to return to the bench. During my light work in the Dental Hospital, then in Soho Square, as assistant Dental Surgeon, I noted the advantages the student of mechanical training had over those without. The opportunities the hospital furnished were seized upon at once on the one hand and carried through during the two years hospital practice with a success delightful to witness, while the student without this mechanical training only appeared to wake up at the commencement of his second year to find half his opportunities vanished, leaving the hospital in a very unsatisfactory state as to his operative ability. If you admit this fact—that attention to the mechanical department of our art is worthy in itself to be well studied, how much more desirable is it when we find this training peculiarly fits him for his more responsible duties in the operating room. This very point is engaging the attention of surgeons and physicians in town and country. The physician of Middlesex Hospital in his opening address on the 1st October drew attention to the great desirability of all medical students acquiring a knowledge of drawing, that they may learn through all the senses—seeing, hearing, and great stress is laid upon the sense of touch by this lecturer. The *Times* writes a leading article upon this subject. My argument then, sir, is—if it is necessary for the surgeon how much more so for the dentist. Mechanism and drawing can scarcely be separated. Hunter ascribed his success to his early training as a cabinet-maker. Sir William Ferguson was proud to the day of his death of his handiwork in wood; and our celebrated Cartwright, senior, of his ability as an ivory turner. The second part of the course of a student's training is so important that no two opinions can be held respecting it—viz., the dental hospital practice of a well-organised Dental Hospital. Permit me to draw your attention to the difference between the Dental Hospital practice of a Dental Hospital and the hospital practice of a general hospital. The student of the one is the practical operator in the other; he observes and receives theoretical teaching, but the practical work is wanting. It is only when a qualified surgeon finds himself appointed as assistant-surgeon to a general hospital that his practical work commences. Hence the necessity for a longer course of study as a student in the one than the other. When a dental student completes his curriculum he is to all intents and purposes a finished dental operator, or if not it is his own fault through lost opportunities; whereas when a surgeon completes his course he is only a theoretical surgeon minus the practical, except so far as a dressership duties may be excepted. Here again peeps in the difficulty of a student trying to accomplish his three duties—first, his training in the mechanical department; second, Dental Hospital Practice and Dental Hospital course of lectures; and, third, General Hospital practice and the course of lectures at such hospital, namely, in anatomy, surgery, and *materia medica*. Permit him to accomplish the first, and he may with success undertake the two latter. The course of lectures and hospital practice of the Dental Hospital is found to harmonise with the lectures and hospital practice of the general hospitals, so that a student is enabled to attend both without losing opportunities at either. Occasionally there is a difficulty, and if this is to be surmounted the General Hospital Schools must open their portals to the election of a full complement of

dental surgeons and assistant dental surgeons, and find funds for the working of such department. I will not detain you here to enlarge on this topic, but I pass on to the comparison of attendance of hospital practice and lectures for a dental surgeon and the course necessary to obtain the diploma of a full member. Four years is the time necessary for the curriculum of a membership, but the colleges are now willing to accept a certificate of pupilage for one of these four years from a qualified member. This reduces the actual attendance at hospital and lectures to three years, one year in excess for the time necessary for the L. D. S. This one year would be well spent by all dental students, owing to the advantages accruing to every one in after life from his knowledge on all his subjects being more complete. His medical knowledge would be more matured, he would be able to estimate the effect of shock to the systems of the strong and the delicate, which our operations more or less invariably produce; he would be able to judge when to undertake a series of operations and when to delay; he would be able conscientiously to undertake the administration of anæsthetics; he would be able to call upon his patients for extended confidence both before and during such anæsthetics; he could administer treatment in cases of difficulty and danger; he would be competent at all times for every emergency. Our students are called to practise in towns which possess no special chloroformist, and each has to depend upon his own resources. If the majority of our students attained the full membership we should cease to hear of lamentations, that our friendship was esteemed less highly than our medical brothers. The *status* of our profession would be accepted and conceded to us, even as the endowment of high-toned character is to our University men. The effort in youth to attain to the highest sources of information, and to possess the highest qualification the land of his birth can bestow, is the surest way to elevate not only his own individual position but to exert a lever of immense power in lifting the whole of his brethren engaged in similar vocation. Petition your college, dear Scotch friends, to grant you a Diploma of the highest character. You will then elevate yourselves. Your Examining Board will never be without numerous applicants for examination; your Southern friends will flock to your college even as they do to your universities; your diplomatic men will be sought for by the general public as much as your highly educated Scotch members of the medical profession. If you make the pupilage of three years a necessity for your Dental Diploma it would compel members of your college to become familiar with our work before they could obtain the Diploma in Dental Surgery. God speed you, dear friends, in this most important work.

The CHAIRMAN: I hope you will discuss very freely the question as to the possibility of establishing a school in Edinburgh, first brought forward by Dr. Smith, and the question whether as in London, workmen should not in the course of their lives be anything more, but who with unusual perseverance may become something more. I regard the artisan in my workroom as a person who supplies me with what I want in the same way as an instrument maker supplies a surgeon. I get what I want, the same as a surgeon who is engaged in orthopraxy. One of the first workmen I had was a mathematical instrument maker. He came to me because I gave him five shillings a week more than he was obtaining at that employment. He remained ten years with me, and became one of

the best workmen, and was employed by other practitioners in London. He is now dead. When he left me I got a working goldsmith, not a subordinate, but taking the lead in the matter, and he remained with me fifteen years. In London it is not difficult to get a person to do for you work in the same sense as a surgeon gets the instrument maker to do what he requires. Therefore I am anxious that that question should be raised here. Dr. Smith raised a great difficulty in regard to that matter, and I think that Scotchmen and Edinburgh men present will do much service if they express their opinion on the subject.

Dr. SMITH: I merely raised the difficulty from having observed the state of matters in Scotland as compared with England. In London you have got a population of four millions, while in Edinburgh we have only three hundred thousand. In all Scotland we have not got the population you have in London alone. In London you have got five hundred dentists, while in Edinburgh we have only forty. The two places cannot be compared, being entirely distinct from one another. Liverpool and Manchester have twice the population of Edinburgh, and even in these places the schools have a little difficulty in getting on. How many Dental schools could you support in London, which is twelve times the size of Edinburgh? If you tried to support twelve you would perhaps find yourselves landed in as great difficulties as we do here with one. You say—You must attend the Edinburgh Dental School, and if it breaks down what are you to do? I think it a little unfair that a lad should not be allowed to practice on his own account if he is a workman, and that he should be a workman all his days. I would give him a little chance of practise. Take the case of a Dentist about John O'Groat's house, who is travelling from village to village. Is it worth his while to undergo a curriculum more expensive than a surgeon's; merely to be set down in the Isle of Skye, or Nairn, or Tongue, or such like places? It is not worth his while. But if you give a limited license to men who have made good Dentists, it would be different. There have been pretty good Dentists before our day, and before there was any Medical or Dental Schools. I have no wish to obtrude my views on the subject, but it is one point to discuss.

The CHAIRMAN: I wish the matter to be freely discussed, but I would remind Dr. Smith that there are those who have been employed all night in mechanical work, so that they might attend lectures and the College of Surgeons during the day.

Dr. SMITH: And I am one of them.

The CHAIRMAN: So that we would not make a law to prevent men of energy from getting on.

Mr. HEPBURN: I feel decidedly opposed to any variety of qualifications. We talk of its being unfair to the workman in his not having certain privileges, but would it not be unfair to those who have gone through the whole curriculum that men who have taken a minor position would be entitled to the same privileges in reality as those who had taken a higher one. Such a man would be a Dentist equally with the one who had higher qualifications. With reference to the other matter—the hardship of those men—there would be no man entering as a workman but who would know that he must continue a workman all his life, or he must do the other thing, and go through the curriculum. We would never think of giving medical men these lower degrees.

Dr. SMITH : There are different degrees—University Degrees, Apothecary Degrees, and so forth.

Mr. HEPBURN : But they are all qualified.

Dr. SMITH : Yes.

Mr. HEPBURN : We find that doctors can make a living in the places to which Dr. Smith has referred, and I do not see why the Dentists would not do the same. I do not see that it would be any hardship entering the profession as a workman to know that, if he does not go through a certain course, he must continue to be a workman. A clerk entering a lawyer's office, if he does not do anything to promote himself, must remain a clerk. With regard to the workmen, so long as you are able to give 5s. more than a joiner or a plumber, or any other trade, you will get the men. It is simply a matter of supply and demand, and on the conditions which I have named.

Mr. J. SMITH TURNER, London : I think there is but one opinion amongst all who have listened to Dr. Smith as to the immense amount of time and thought which he has given to the subject. It shows, what must be very gratifying to every one, that he has now, as he has ever had, the welfare of the profession at heart. It seems to me that his views hang on one or two points. One is the convenience of students, and he seeks to obviate the difficulty students have in attending certain centres of education. He seeks, by true examinations, to modify this inconvenience. Dr. Smith says : "It is practically impossible, under the present circumstances of Dentistry, for students or assistants serving their apprenticeship in remote parts of Scotland to attend a curriculum, which must, of necessity, be prescribed as unavoidable for obtaining anything like the higher qualification." Now, wherever a student may be residing, it is simply an hour or two on the length of the journey—the expense is in the attending the school. Again, the doctor says, referring to the first professional examination, which is a mere minor examination, "But in all cases, before applying for admission to the first professional examination, the candidate should be required to produce evidence of a certain term of apprenticeship in a recognised workshop, and of a certain term of attendance in a Dental Dispensary, or in a Dental practice of a recognised hospital or practitioner." Now, it may be very nice for men who live in a town where hospitals are to attend them, but, unless you can establish a hospital in every town, a Dental hospital or general hospital, some complaint may be made by any one who has to come to a centre.

Dr. SMITH : I put in "practitioner" as a saving clause. I saw that was a difficulty.

Mr. J. SMITH TURNER : I do not see that we can legislate for the education of practitioners, and if we are trying to frame the conditions on which men shall enter a profession, and to provide a curriculum for our children, I do not think that the supply of workmen will be affected by any such arrangement. It has been well said that law clerks have never been found hard to get, but I cannot see how that is to affect the workmen in Edinburgh, because from my knowledge of things a large number of the workmen in London have been supplied from Edinburgh. You have far more workmen than you want, and you send them to London and Paris.

Dr. SMITH : But they have all the chance of becoming practitioners. That is the reason why you have so many.

Mr. J. SMITH TURNER: And you generally find the Scotchmen managing the work. It is all very well to my mind to make a profession easy to get into; but by doing so, you do not elevate the profession. If you want good men, they must show that they occupy the position of professional men; otherwise they degrade it. Then there is a point with reference to registration. Dr. Smith says there are two classes of druggists and chemists; but after the present time there will not be two qualifications for chemists and druggists.

Dr. SMITH: I went to the Pharmaceutical Society and got their laws.

Mr. FINLAYSON LEITH: In 1854 I passed the minor and major examinations as a pharmacist. You will find that each examined pharmacist has a number affixed to his certificate which he has obtained. It is called a diploma. But those who were in business were simply registered. They have a blank opposite to their names; and in 1858 the register of the chemists and druggists came into existence. The pharmacists came first as a distinct body; but then the term was dropped, and they became chemists and druggists, after an examination much stricter than the pharmacists underwent at that time.

Mr. J. SMITH TURNER: We do not wish to make invidious distinctions. We want the whole profession to come under one name, and take a pride in calling themselves "dentists." I do not see why a dentist should be handicapped by two degrees. When a man goes into the world as a practitioner he goes with his single degree. If he wishes to go in a high position as consulting dentist, then he adds his additional degree. I think that a dentist should be allowed to practise with one degree, and that degree as at present a Licentiate of the College of Surgeons in England. I hope that may be granted by the college in Edinburgh and in Ireland. I do not see why there should be a complexity of arrangements which it would take a lifetime to understand.

Mr. ROBERTSON: as regards the word "practitioner" in Dr. Smith's statement, I would draw your attention to the fact that the universities in this country have seen the difficulty of causing the students to attend the University for four sessions, and they have introduced into their arrangements what is called a medical practitioner. I think that Dr. Smith's theory is thoroughly practical. Talking of lawyers and comparing them with dentists is utterly absurd. I think that we should have two degrees, that of Surgeon and Surgeon-Dentist. Any man who wishes to be called a Surgeon-Dentist may go into the second examination. In the medical profession there are some who unite three sessions and become members of a medical society. They are allowed to practise as Surgeons; but Medical Doctors must go on for four sessions at least, and I do not think that it is at all impracticable that the same thing should be followed in regard to dentistry. No man if above forty years of age, would ever succeed in getting a Dental Diploma—would get it as required by a surgical diploma. The only way to meet existing dentists having a diploma is to do as Dr. Smith suggests—to bring forth a school of mechanical dentists to be registered, and all those who wish to be registered as Surgeon-Dentists may have that done.

Mr. WALLACE, Glasgow: It appears to me that you are going away from the matter altogether. Having been connected with the Dental profession for some time, and having a sympathy with your endeavours to get some measure passed to raise the profession, I think you will come against a rock that will prevent that going forward if you do not

agree. Some remarks have been made of a generous and liberal character all over; but some speak about quacks and other unqualified individuals, and probably some of us may be the quacks. I for one do not like to be put in that position at any rate. I think it would have been better if they had defined what they meant by a "quack." I have given all aid to the movement by my professional assistance in the matter, but if I am to be dubbed as a quack, and as I have advertised as many others have done, I should not continue to give my assistance. I would propose a resolution to this effect: "That the Reform Committee endeavour to pass a resolution that all present dentists be admitted as qualified, and that those who may desire a dentist qualification afterwards, shall have to pass through an examination that may be decided upon." I think that is quite necessary. In the way in which it was put before us, I was rather in a difficulty in the position I occupied in the Dental profession. If it is the case that this is the object of your resolution I have no objection to let mine fall to the ground. I believe if you have passed a resolution of this kind that the Dental profession will be in a position to raise its status, and do a great deal of good; but if you make too many qualifications, and put any drawback against any individuals in the profession, no Bill will pass Parliament to give a particular section any particular privilege whether they advertise or not.

Mr. CORMACK: You forget that all the existing practitioners have that privilege.

Mr. HUET: Perhaps it would not be out of place on my part if I were to assure the last speaker that I stood on the committee as representing a large number of gentlemen who do not hold a qualification. I myself hold the qualification of 1861, which stands as nothing at the present time. But let me assure the last speaker that if he had been present at those meetings he would have seen that a liberal consideration is shown by the Executive Committee to every man in practice, and that it was not to interfere with those in practice at the present time, but rather to legislate for those who come after us.

The resolution was then agreed to.

Dr. CHISHOLM (Edinburgh) said: In moving the adoption of the fourth resolution, I think that, as regards the future of our profession, it is of the foremost importance. The general body of the profession are now becoming aware that the public know that there is a dental qualification, and at last are beginning to make a distinction between the educated and qualified man and the mere mechanic. I have every sympathy with the movement that the College should again, but for the last time, grant an examination to respectable men who have been in practice, but who from lukewarmness or non-appreciation of the value of a qualification, have not availed themselves of the opportunities previously given. This I think for the attainment of our object to be necessary, as it is only now that the great agitation for dental reform, for compulsory education, and registration, is beginning to be felt as an absolute necessity by the great body of respectable dentists, and it is only by swelling our ranks with every respectable man in the profession that we can hope to gain that end. It is a most anomalous state of affairs, that a man can qualify for any degree in Arts, Divinity, or Medicine in almost every city in Europe, and that for the specialty of Dentistry there are only, so far as I know, two spots on the face of the globe where the necessary technical course

of education is taught, and a man can qualify—viz., London and the United States. With such insurmountable impediments as these must prove to most of our profession, we cannot wonder that so few of the younger members have been able to qualify for the L.D.S. In Edinburgh, Glasgow, Aberdeen, Dublin, and many other towns in Great Britain, a man can take out all the medical and surgical classes necessary, but as in my own case, it is absolutely necessary to reside for two years in London to attend the requisite technical lectures in order to qualify. This gives the London man a great pull over the provincial ones, as he can attend these lectures during the time he is going through the ordinary course of medical study, so that there is no wonder that men in the provinces have found it in many cases impossible to spare the time or money requisite to obtain the degree. We in Edinburgh have exceptional advantages in the way of education; and with the Edinburgh Dental Dispensary (attendance at which is recognised by the Royal College of Surgeons) as a nucleus, I sincerely hope that we may be able to establish a dental school second to none in Great Britain, and thus give to the men of Scotland who would elevate their profession at least a fair chance of proving their sincerity that they wish to raise dentistry to its proper place as an important specialty of the medical profession. I therefore beg to move the adoption of the following resolution:—"That in view of the proposed legislation in reference to the dental profession, increased educational facilities are demanded."

Mr. FINLAYSON, Leith: I have much pleasure in seconding the motion. I quite agree with what Dr. Chisholm has said, and I heartily enter into the views expressed by Dr. Smith in regard to education. Considering the advanced hour, I shall not detain you longer.

Mr. O'DUFFY, Dublin: Since I came into the room, it has occurred to me that, as I am the only Dentist present from Ireland, and seeing that I have taken part in a movement in connection with the Royal College of Ireland, my silence might be misunderstood if I were not to say anything. I may say, on behalf of myself and the Royal College of Dublin, that the movement for establishing a similar institution in Edinburgh has our entire sympathy.

The motion was then unanimously agreed to.

Mr. WILSON, Edinburgh, proposed the fifth resolution, as follows: "That a Committee, with full powers, be appointed to confer with Dr. Smith and the staff of the Edinburgh Dental Dispensary as to the expediency of extending that institution to meet the requirements of the L.D.S. qualification." It is generally admitted, he said, that the experience acquired at the Dental Hospital is a thing almost essential, and, if we are really to have the power of educating such practitioners in Scotland, we must have such an institution; and it is certainly more feasible to adopt one already existing than to begin a new one. This is the most local of all the resolutions, and I think that all I have to do is to propose it.

Mr. PLATT, Stirling, seconded the motion.

Mr. J. SMITH TURNER: We know that a surgeon may demonstrate to a large number of men, and lecture to a large number of men, but a Dental teacher cannot demonstrate to a large number. But if we get compulsory education, I believe there will be schools not only in Edinburgh, but in other populous towns as well. I hope there will be room

in Glasgow and in other parts of the country for them. We require a number of teachers for a comparatively small number of students. Therefore, I think, there will be work for a large number of schools.

The CHAIRMAN : The remark which Mr. Turner has made is perfectly relevant to the question. If such an education becomes compulsory, you will have, I have no doubt, a considerable influx to our profession, and there will be room for a considerable number of schools. As it is, Dental education is a matter of selection. The industrious and painstaking will get a Diploma, but the less painstaking will get no Diploma, and the idle will give no attendance at all. My own impression is, that the 2,000 students will become more than 4,000 when they are more efficiently educated.

The motion was then agreed to.

The CHAIRMAN : As to the sixth and last resolution, I urge that this be passed in its integrity. You ask the College of Surgeons to grant a Dental Diploma. That is the first step you take. When you get this power, I have no doubt you will soon get educated students. When these powers are granted the education will become compulsory, and the whole thing will be, to a certain extent, re-cast, so as to admit men for examination, and it is then the Dental Diploma will have its say.

Dr. DELESSERT, Aberdeen : Is it expedient for the Royal College of Surgeons, Edinburgh, to have powers to grant a Dental Diploma ? Yes ; for when we have registration this degree in Edinburgh will be as necessary to northern Dental students as, since the passing of the Medical Act, the Medical Diploma has been to northern Medical students. Once get registration, and you must follow it up with facilities for education and qualification, so that, when the present race of self-styled, non-educated Dentists have had their day, a new era will begin, that of the State preventing from practice any but qualified, registered Dentists. In the next generation then we may expect fruit from the seed sown by the resolutions to-day. It is necessary now to obtain powers from Government for the Dental Reform Movement as a whole, and not to take it piecemeal, which would only be loss of time and money. We have many examples of men from the North whose names have done honour to the whole medical body, such as Ferguson, Syme, Simpson, Lister, Ferrier, Matthews, Duncan, and many others ; and why, if we seek, may we not be able to produce a northern Tomes, a Cartright, or a Hepburn ? We want to sink all party feeling, and with one great effort raise the science of Dentistry to a recognised position, namely, a branch of Surgery, but necessarily different. The day may come when the mechanical Dentist will occupy one position and the Dental surgeon another ; but that time is not yet come, and until then we must work for the common good to take Dentistry as it is and improve it as a body. Dr. De Lessert concluded by moving—"That the same committee be further authorised to memorialise with the Royal College of Surgeons, Edinburgh, as to that body obtaining powers to grant a Dental Diploma."

Mr. WELLS, Berwick-on-Tweed, said :—I have much pleasure in seconding this resolution. I see it is the last one of our list, but that in my opinion does not make it the least, as I consider it one of the most important. I think our great aim should be to get the College of Surgeons, Edinburgh, to grant a Dental Diploma, and if we succeed there is no doubt, I should say, that their doors would at first be opened like the College of London for those already in practice, and who do not

advertise to pass their examination without any curriculum. There is one thing which I am sure we ought all of us to do if we wish to succeed, that is to pull together, to give in a little to each others ideas, and then with a strong pull and a good pull with such able steersmen as we have this day to guide us, I have no doubt but that we shall reach the desired point at last, that is of raising the Dental Profession. When the Edinburgh College does open its doors, I feel sure that every one that takes the very slightest interest in the Dental Profession, not having already a Diploma, will be only too happy to avail themselves of the examination. Gentlemen, I feel that there are those amongst us that can explain matters much more freely than I can, so I beg you to excuse me saying more. I might add the words used by Dr. Wormald at Birmingham when he says—"We want to bring within the reach of a body of men (already in a position which no Diploma can take away) power to obtain a Diploma, men who would at the same time bring credit to that Diploma and make it be regarded by the public as a qualification for Dentists."

Mr. MACLEOD, Edinburgh (Secretary): I beg to support the resolution. While you appoint the committee you neither define the time, nor the method wherein they approach the College of Surgeons. They will be, rather as it were, a party of observation who, having some local power conferred upon them by their brethren in Scotland, will watch the movement, and take the opportunities that seem to them best to approach the College of Surgeons. Neither do you attempt to place upon the College of Surgeons any definite manner in which they shall be received. That will be a matter between the committee appointed and the College of Surgeons. I have great pleasure in seconding the resolution.

Mr. CAMPBELL, Dundee: I heartily approve of the resolution, and shall be happy when it becomes an established fact, and we have a school of Dental Surgery in Edinburgh to which I could send my sons and pupils instead of sending them to London, and to where they may go after their education is finished, and receive a diploma, instead of having to go to London also for that. I have within a short period sent two good young men to London. One of them who is here has passed his examination, and is an L.D.S., and I believe I could more readily get my pupils and apprentices to come forward if they could come to Edinburgh, where they would be more at home, live more economically, and attain their end more quickly, and at least more easily.

The resolution was then passed, and the following gentlemen were appointed members of the committee with power to add to their number:—Mr. Hepburn, Dr. Hogue, Dr. Smith, Dr. Chisholm, Dr. Roberts, Messrs. Wilson, Cunningham, Matthew, Cormack, Campbell, and MacGregor; Dr. Woodburn, Glasgow; Mr. Williamson, Aberdeen; and Mr. Macleod.

The SECRETARY intimated that he had received the sum of £10 from Mr. Wallace, Glasgow, for the purpose of promoting the movement in whatever way might be thought best. He has since received £2 2s. from Dr. Reid, Heriot Row, Edinburgh, and £1 from Dr. Hardie, Montrose.

Mr. WILLIAMSON, Aberdeen: You have been called on to-day to discuss six resolutions. They have been, I have no doubt, the result of a great deal of labour on the part of the committee; but I have a motion now to make which I am sure will be received with unanimous and

heartly response. It is that we give our sincere thanks to our chairman, Mr. Tomes. His labours to shed lustre on our profession have been great, and he has done us great honour in meeting us here to-day. Many of us may have had the privilege of meeting him before, but there are many who have only seen him for the first time, and it must have been a great pleasure to many to see him in the flesh who only knew him before by report and by his works. I have great pleasure in moving a vote of thanks to him for his conduct in the chair.

Mr. CAMPBELL: I have great pleasure in seconding the motion.

The motion was enthusiastically agreed to.

The CHAIRMAN: Although not a Scotchman, I hope you have considered me a Scotchman for the time being. It was no doubt somewhat difficult for me to come here. To a man who is sometimes in good health and sometimes in bad, travelling 400 miles is always a consideration. I in more ways than one have had great pleasure in meeting with the members of our profession here, and I have been amply rewarded for any inconvenience that such a journey might cause. I only hope that the feeling that has been displayed this evening may continue, and that the objects on which we have voted unanimously in each instance will be carried out. As chairman of the Reform Committee, I can assure the gentlemen present that there is the greatest desire that the measure carried should be of the most liberal kind. The scheme under consideration is matured so far as to recommend that every Dentist in practice shall be registered—that is, that he shall appear as a person in practice at the passing of the Act, and that he shall have his lawful rights—shall be excluded from attending our juries, and have a legal claim for his services. It will be nonsense to say that he shall put a particular qualification after his name when he has not one; and it would be unfair to others. As to their power to obtain a qualification all the older men will remain what they are. They are qualified already. The experience they have had recognises them, and the law recognises their position and claim. As to the men who are younger, who would like to submit to an examination, there will no doubt be some provision made to meet most cases; but the precise nature of the provision will depend on the way they address those bodies, and the requirements they make. They may be reasonable or unreasonable. Placing ourselves in relation to the medical profession in regard to registration we will be much better than if we were isolated. We would have, in the Medical Council, a body composed of representatives of medical interests—a body that is particularly approachable, and a body that will consider all suggestions that are made, and will legislate on all those matters better than we could legislate for ourselves, for it is an established fact that when men of one sort come together they become extremely unreasonable. If we, as Dentists, were to make our own laws, we would soon consider the public as creatures for our own purposes. Gentlemen, I need not detain you longer. I thank you for the very hearty reception you have given me, and, in returning to England, I would express the hope that I have done you no injury by assuming, for the time being, the character of a Scotsman.

Mr. CAMPBELL: There is just one matter I wish to bring under your notice, and that is, whether there should be a secretary and convener appointed now, or whether the Committee should be left to do so.

It was agreed that it should be left to the Committee to make the arrangement.

The conference then terminated.

In the evening the members of the Conference dined together in the London Hotel. Mr. Tomes, F.R.S., occupied the chair. Mr. Williamson was croupier. The proceedings were throughout of a very agreeable character.

Summary of Dr. Marion Sim's Paper on the Discovery of Anæsthesia,

1st, That since 1800, the inhalation of nitrous oxide gas produced a peculiar intoxication, and even allayed headache and other minor pains; 2nd, That Sir Humphrey Davy proposed it as an anæsthetic in surgical operations; 3rd, That for more than fifty years the inhalation of sulphuric ether has been practised by the students in our New England colleges as an excitant, and that its exhilarating properties are similar to those of nitrous oxide gas; 4th, That the inhalation of sulphuric ether, as an excitant, was common in some parts of Georgia forty-five years ago, though not practised in the colleges; 5th, That Wilhite was the first man to produce profound anæsthesia, which was done accidentally with sulphuric ether in 1839; 6th, That Long was the first man to intentionally produce anæsthesia for surgical operations, and that this was done with sulphuric ether in 1842; 7th, that Long did not by accident hit upon it, but that he reasoned it out in a philosophic and logical manner; 8th, That Wells, without any knowledge of Long's labours, demonstrated in the same philosophic way the great principle of anæsthesia by the use of nitrous oxide gas (1844); 9th, That Morton intended to follow Wells in using the gas as an anæsthetic in dentistry, and for this purpose asked Wells to show him how to make the gas (1846); 10th, That Wells referred Morton to Jackson for this purpose, as Jackson was known to be a scientific man and an able chemist; 11th, That Morton called on Jackson for information on the subject, and that Jackson told Morton to use sulphuric ether instead of nitrous oxide gas, as it was known to possess the same properties, was as safe, and easier to get; 12th, That Morton, acting upon Jackson's off-hand suggestion, used the ether successfully in the extraction of teeth (1846); 13th, That Warren and Hayward and Bigelow performed important surgical operations in the Massachusetts General Hospital (October 1846), on patients etherized by Morton, and that this introduced and popularized the practice throughout the world.—*Virginia Medical Monthly*, May 1877.

Committal of a Medical Assistant.

THE Birmingham magistrates last week committed to the assizes George Howard, set. 31, assistant to Mr. Badger, surgeon, of that town, for an assault upon a married woman named Fanny Child. The evidence showed that complainant went to the defendant to have some teeth extracted, that he administered chloroform, and whilst under its influence committed the offence charged against him. Complainant said though she was unable to speak she was conscious of all that passed. This case will most likely give rise to considerable difference of opinion among the medical "experts" at the trial.—*Medical Examiner.*

Dispute Between Dentists.

This was an action lately tried at the Court of Passage, to recover damages for breach of agreement and wrongful dismissal, the plaintiff being Morris Benjamin Soloman, dentist's assistant, and the defendant Henry Gabriel, who carries on the business of a dentist in Bold-street, Liverpool, under the style of Jones and Company. Mr. Segar was for the plaintiff, and Mr. Kennedy for the defendant. The case for the plaintiff was that the defendant engaged him to superintend the business of his establishment in Bold-street, the engagement to be for twelve months, and the remuneration £4 a week and 5 per cent commission on the gross earnings of the business. There was no agreement in writing, but it was merely understood that the terms of engagement were to be as stated, and which were contained in a letter of the plaintiff to the defendant when he applied for the appointment. The plaintiff entered upon his duties on the 9th of April last, but three days after he was dismissed by the defendant, because he declined to enter into an agreement for the engagement to be from week to week. Mr. Kennedy, at the close of the plaintiff's evidence, submitted that there was no definite agreement, and that the plaintiff should be non-suited. His Honour, after reading the correspondence, nonsuited the plaintiff.

Sidlo on Parenchymatous Glossitis.

DR. T. SIDLO, of Vienna, reports in the *Allgemeine Wiener Medicinische Zeitung*, Nos. 8, 9, 10, 1877, seven cases of acute parenchymatous inflammation of the tongue. In six of these cases the whole organ was affected; in the seventh the right margin only was inflamed and swollen.

Five patients were between the ages of 20 and 25 years; one patient was 30 years old, and the seventh 44 years. All the patients were males. In six out of the seven cases the affection came on in the winter. Three patients, up to the commencement of the attack, had been strong and in perfect health; one patient had recently suffered from intermittent fever, and another from croupous pneumonia; the sixth was the subject of chronic Bright's disease, and the seventh of pulmonary tuberculosis. The author states that in most cases of this rare affection there is some difficulty in determining the cause. It seems to be very seldom, if ever, due to any traumatic influence. According to Bamberger, sudden chilling is the most frequent cause. In four out of the seven cases reported by Dr. Sidlo, the attack came on shortly after exposure to cold. Not very much importance, however, is attributed by the author to the action of chilling in the *direct* causation of glossitis. Inflammatory irritation of the pharynx and air-tubes is very often produced, he points out, by cold, but the tongue itself is very rarely affected in like manner and from such cause. It is thought that in those cases of parenchymatous glossitis in which there is a true history of exposure to cold, the tongue is not primarily affected, but the inflammation is first excited in the soft parts of the sublingual and submaxillary regions, and afterwards extends to the tongue itself.

In his remarks on the treatment of parenchymatous glossitis, the author advocates the use of the knife in preference to the application of caustics and astringent solutions. The sucking of ice seems to be attended with but little benefit. When the tongue is much swollen, it should be promptly incised. Rapid relief is afforded by incisions; pain speedily subsides, and the tongue soon regains its normal size and freedom of movement. In all, save very severe and advanced cases of glossitis, and when extreme swelling of the tongue and alarming dyspnoea demand speedy relief through long and deep incisions, the author prefers to free cuts on the dorsum multiple scarifications of slight extent and depth along the free margins of the organ. Through this practice, drainage of effused fluid is established in many directions, and reduction of swelling is more rapidly effected just at the parts where it is most needed, viz., along the margins of the tongue, which are liable to become ulcerated in consequence of pressure on the teeth.

The author opposes the generally accepted view that the dyspnoea and attacks of threatening suffocation often met with in cases of acute glossitis are due to swelling of the posterior part of the tongue to such

an extent as to cause this organ to touch the posterior wall of the pharynx, and to depress the larynx. Such result of abnormal increase in the length of the tongue is obviated by its partial protrusion in front between the teeth, and by the efforts of the patient to drag it forward. The tongue, according to the author, in consequence partly of its enlargement, partly of swelling of the sublingual soft parts, becomes elevated and applied to the nasal palate; at the same time the posterior portion of the swollen and elevated organ presses upwards and backwards upon the soft palate, which then acts as a curtain, and arrests the passage of air from the nasal fossæ into the pharynx.—*London Medical Record*.

Tiffany on Calculi having Teeth as the Nucleus,

At a meeting of the Baltimore Clinical Society (*Maryland Medical Journal*, June, 1877), Dr. Tiffany exhibited an interesting specimen of calculi, removed from the bladder of a woman 55 years old. Lithotripsy was performed. It being found exceedingly difficult to crush two pieces, after continued trial they were removed through the urethra, by distending it. Upon close examination, the pieces were discovered to be two well formed adult molar teeth. They had formed the nuclei of the calculi, but in what manner they had found their way into the bladder, Dr. Tiffany was unable to find.—*London Medical Record*.

LONDON DENTAL HOSPITAL.

CASES TREATED FROM SEPT. 1ST TO SEPT. 30TH, 1877.

Extractions.	Children under 14	...	...	...	521
	Adults	...	...	...	796
Under Nitrous Oxide	...	...	...	...	228
Gold Stoppings	...	...	...	...	182
White Foil ditto	...	...	...	...	25
Plastic ditto	...	...	...	...	306
Irregularities of the Teeth treated mechanically	...	...	...	...	24
Miscellaneous Cases	...	...	...	...	168
Advice Cases	...	...	...	...	81
Total					2331

LAWRENCE READ, *Dental House Surgeon*.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of Messrs. SMITH, ELDER, & Co., 15, Waterloo Place, Pall Mall.

All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4, Crane Court, Fleet Street, E.C.

THE MONTHLY REVIEW

OF

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Vol. VI.

The College of Surgeons and the Dental Memorials.

THE human mind is not infallible; neither are institutions which have for their units human minds. As there are minds of different degrees of correctness—a greater ability for one mind, more than another, to grasp the data of a sociological problem—so are there societies, or bodies of men, which, being the aggregates of their individualities, have a power for good according as that power is possessed by their units.

Such was the axiom with which, in the July number of the *Monthly Review*, we prefaced our criticism of the memorial of the Association of Surgeons Practising Dental Surgery.

At a meeting of the Council of the College of Surgeons, held on the 8th inst., the recommendations contained in the President's report were finally considered, and the Council decided that the degree of Licentiate in Dental Surgery be essential for a Lecturer on Dental Surgery, and also for a Dental Surgeon of the Dental Department of a recognised hospital. That either the L.D.S. or other registrable qualification be sufficient for a Lecturer upon Dental Anatomy and Physiology. That these resolutions come into force on the 1st of October, 1878.

By these equitable decisions, deliberately arrived at by the Council of the College of Surgeons, does that body recognise and maintain the virtue of a qualification created by them, and the standard of the efficiency which is held in their own hands.

To have granted the prayer of the Association (*vide* vol. V., p. 529) would have been to undo that which they had done; and, in so undoing, would the Council have perverted the principles upon which they instituted the L.D.S.—would have acknowledged their impotence to deal with matters peculiarly their own—and have broken the faith reposed in them by over 300 reputable practitioners. These inconsistencies, apart from the logical bearings of the case, did an Association of some 30 gentlemen beseech the Council of the College of Surgeons to perform.

How such a body of gentlemen could have closed their store of experience, and have shut their eyes to the existing condition of things, while they formulated their ill-advised memorial, is difficult to account for; and were we to attempt such a thing we should be driven to our opening remarks as the basis of investigation. However, the Council, in its decision, has not only refused the prayer of the Association, but it has granted the almost universal petition of the Licentiates by placing the L.D.S. “first and foremost for the Dental Teacher and Practitioner.”

We are confident that the great majority of the Dental Profession will have inward feelings of gratitude to the College of Surgeons for the deliberation which they have devoted to this subject, and for the additional impetus their decision will give to Dental Education.

We have thus an example of the law we merely alluded to in the conclusion of the leading article on “The Winter Session,” in our last issue, according to which individuals

can move either in equilibrium, or in direct unison with a given scheme.

The Association, through their memorial, sought to act in equilibrium upon the educational forces now working in our profession. But that restraining influence, doubtless an outcome of good intentions, has been overcome and taken up by the greater body. So, with the consequent re-distribution of force, let us hope that an amicable unity of purpose will prevail, and be one dominant factor in the further evolution of dental education. Let all consciously, therefore, with merited honour, help to work out this one concrete phenomenon, to which all of us are, to some extent, enamoured—the Dental Profession.

In anticipation of the Council of the College of Surgeons further considering the Dental Memorials at their meeting on the 8th inst., a committee of gentlemen drew up another memorial for presentation to the Council. This memorial, which we publish at another page, was sent to all the Dental Licentiates in the United Kingdom and France. It was signed by the great majority to whom it was sent, and presented to the President and Council of the College of Surgeons, by whom it was referred to a committee for consideration. •

The first of these representations reads thus:—"The curriculum required of the qualified surgeon who desires to take the licentiatehip in dental surgery is now extended over three years. Seeing that he can devote his undivided attention to the study and practice of the special dental subjects, we beg to suggest that the time might, without detriment to proficiency, be shortened to two years, or an uninterrupted daily attendance of eighteen months." During those three years the special dental subjects to be attended are, two courses of lectures on Dental Anatomy,

on Dental Surgery, on Dental Mechanics, and one course on Metallurgy, with two complete years of Dental Hospital practice, and three years practical Mechanics. Yet for a man who pleases to first take his membership, and who may never have had an excavator, or a plugger, or an artificial tooth in his hand, it is suggested that this curriculum of special dental subjects might, without detriment to his proficiency, be accomplished in eighteen months!! How those special subjects of study and practice can be accomplished in eighteen months, without detriment to proficiency, and according to the present regulations of study, we fail to see.

Compare it with a statement in the first memorial from the Dental Licentiates received by the council on the 12th of April last, wherein it is asserted that "Adequate competence as a Dental Surgeon cannot be attained in less than two years' close application in the operating-room of a well organised special school" &c. Is there not thus in the prayer of the licentiates a lamentable inconsistency?

Such is our interpretation of the paragraph in question, indeed it is the only interpretation; but surely they who have undertaken the responsibility thereof, and the "majority" who have signed it, do not mean what is therein avowed?

Is it intended that this clause refer to that part of the curriculum which is to be complied with at a Dental Hospital and School only, and not at all to the specified "three years in acquiring a practical familiarity with the details of Mechanical Dentistry"? If so, then the petitioners misrepresent what they mean. The special dental subjects of the curriculum at present require three years, and the special dental hospital practise and lectures two years, for their accomplishment respectively.

We cordially agree with the third representation "that if the examination for the licentiatehip were in part practical, a higher average of practical skill would be reached, both by the teachers and the taught, than that which a strictly verbal examination is likely to secure." Such would be a step in the right direction. It would not only further utilise, but also put to a practical test, the teaching of our special dental hospitals.

We have already said this second memorial from the Licentiates in Dental Surgery has been referred to the committee who bestowed so much careful deliberation upon the questions of the former memorials, now resolved upon by the council; and we have every confidence in their impartial judgement in matters *pro bono professio*.

The Month.

THE LANCET ON THE CONFERENCE OF DENTISTS AT EDINBURGH.

An important Conference of Dentists was held on the 6th ult., in Edinburgh, under the chairmanship of Mr. TOMES, which, if we mistake not, will exercise considerable influence on the future of this branch of the profession in Scotland, and will probably lead to the same result that has already been attained in London—the establishment of a Dental Hospital in Edinburgh, where the student may learn the surgical and operative department of his art; and a dental examination connected with the Edinburgh College of Surgeons, which will give him a diploma, and confer upon him the right to practise and to recover fees.

A carefully worded series of "draft suggestions" was submitted to the meeting by Dr. J. Smith, well known as a highly-cultivated practitioner and author, and these were very fully discussed. Dr. Smith proposed that a conjoint board should be appointed from amongst the examiners of the Royal College of Surgeons of Edinburgh, and the leading dental practitioners to examine in dentistry, the candidates being required to have passed the examination in arts, and for the membership of the College. Mr. Hepburn, with many others, were of opinion that if the cost and the term required for the dental diploma were made too high, the proper dental students would be very few indeed. It

further appears that there are now amongst those practising dentistry in Scotland, as elsewhere, some who are simply mechanics—who bear, that is to say, the same relation to dental surgeons that the optician does to the ophthalmic surgeon. These gentlemen have never had any opportunity of acquiring a general knowledge of medicine and surgery, but are, or may be, from long practice, fairly skilled in performing the ordinary operations of dentistry; and Dr. Smith seems to think that in a country like Scotland, with a widely-scattered population, such a class will always exist. For these he suggests that a lower qualification might be sufficient, and that a minor diploma might be instituted, the title of Dentist being conferred upon them, whilst the term Surgeon-Dentist or Dental Surgeon should be reserved for those who have passed the ordinary College examinations. We venture to think this would be a mistake. In supporting the third resolution, Dr. Walker pointed out that the mechanical part of the education and the hospital work are really incompatible if carried out at the same time. In the interest of dental students, the Royal College of Surgeons should accept an apprenticeship of three years to the mechanical department previous to the student entering a general or dental hospital. That apprenticeship, if served to a qualified man, should count for one of the three years' curriculum now required for the licentiatehip in dental surgery. The student would thus obtain a full mastery of the mechanical department, and obtain facility in the use of the dental instruments, thereby qualifying him to commence his dental hospital practice with success, which is not only theoretical but thoroughly practical. He would also be enabled to give his full and undivided attention to lectures on anatomy, surgery, and medicine at a general hospital, with hospital practice; and should the dental student desire to pass the examination for full membership—which all ought, if possible, to accomplish—these lectures might count for the full membership.

Some hesitation appears to be felt as to whether all who are now practising dentistry should be granted a diploma. But there can be little doubt as to the mode in which this should be met. The diploma must be given to all who are in *bonâ fide* practice; much useless and unpleasant bickering will be avoided; and though some *mauvais sujets* may be included, still the feeling that they have become incorporated with a body of gentlemen will tend to prevent any extravagances, and a certain pressure can always be exerted under these conditions that even the most callous will find it impossible to resist.

Whatever may be the result of this movement, there can be no question that it is an advance in the right direction, and that by insisting on a sound preliminary education, and a good theoretical as well as practical knowledge of dentistry, the heads of this branch of surgery will improve their status, and render their position much more secure, both amongst their professional brethren and in the eyes of the public.

GLASGOW UNIVERSITY.

We understand that Dr. Woodburn has been appointed Dental Surgeon in connection with Anderson's University, Glasgow; and also that lectures on Dental subjects will be delivered at the University.

AMERICAN DENTAL ASSOCIATION.

The following gentlemen were elected honorary members of the American Dental Association on the 10th Aug., 1877:—J. Smith, Turner, M.R.C.S., London; Mordaunt Stevens, M.D., D.D.S., M.R.C.S., Paris; Charles S. Tomes, M.A., M.R.C.S., London; John Tomes, M.R.C.S., F.R.S., London; E. Mosgitol, M.D., Paris; Prof. Wedl, Vienna.

THE ST. LOUIS DENTAL QUARTERLY.

Dr. Henry S. Chase has retired from the editorship of the *Missouri Dental Journal*, and has been succeeded by Drs. Homer Judd, and W. H. Eames. But Dr. Chase, having received numerous letters of "regret" that he had left the editorial chair, since July, was easily persuaded to again put on harness; and that gentleman has, conjointly with Dr. C. W. Spalding, assumed the editorship of a new dental journal in the United States, titled the *St. Louis Dental Quarterly*.

ARTICULATING PAPER.

Mr. Barkley, of Worcester, writes to say that some time since he introduced to the notice of the profession a new kind of articulating paper, made for him by Messrs. Field and Tuer, which yielded its colour far more readily than that which was in general use. It had, however, one great fault, viz., its unpleasant taste, from the oil that entered into its composition, sufficient occasionally to cause nausea to a sensitive patient. Messrs. Field and Tuer have at length succeeded in manufacturing a paper, which, while it is equally satisfactory in depositing its colour, is more stable, and so free from any unpleasantness as to be quite unobjectionable to the most fastidious. It can be obtained direct from the manufacturer, or through the several Dental Dépôts.

Inflammation of the Dental Pulp and the Result.

By J. F. KEKWICK, RUGBY.

THERE are few subjects in Dental Pathology enveloped in more obscurity than an inflamed dental pulp, yet it is one which the dental surgeon is most frequently called upon to treat, and in so doing the cause and nature of the disease ought to be the first questions to engage the practitioner's attention. The knowledge necessary to form proper diagnosis of each case can only be acquired by careful study and experience. The question which naturally follows is, what treatment must be applied? A very ready suggestion is that, when practicable, the pulp should be preserved in its entirety, it being one of the agents by which the tooth receives its nourishment, although some writers question the advisability of attempting to restore the pulp to a healthy condition when it has become the seat of inflammation. This disease may be characterized by slight gnawing pain in the tooth, which, when suppuration of the pulp sets in, assumes a throbbing character. This condition may arise from various causes, such as deep seated caries, or the result of metallic stopping; at other times it may arise from some constitutional disturbance, or the disease may be reflected to one tooth from a neighbouring tooth or root. Whatever cause may give rise to the diseased state of this particular organ the diagnosis must be general as well as local: the mind must be first directed to the vital energy of the system and to the local conditions of the tooth.

The course of treatment must be determined according to the circumstances of each case—whether the disease be of chronic or acute type—the local condition of the tooth—the general condition of the patient. This needs no further proof than the fact that two teeth of a similar condition, but of different individuals, may, under the same treatment, have very different results. If the inflammation is caused by simple decay of the tooth it should, after proper treatment, be plugged with such stopping as the operator may think most suitable to the occasion. If the disturbance is the result of a metallic, or any other stopping, that must be removed. Although amalgam is a much abused material, it is very questionable if it can always be considered the primary cause of a great many cases

of inflammation, the pulp following its use as a filling. If the disease has not passed beyond the inflammatory condition, great benefit may be derived from anti-septic dressings in the carious cavity, and from the application of a leech to the gum. For single fanged teeth this latter may be considered the proper thing to do, but with molars the same satisfactory result cannot be relied upon. When the mischief arises from some constitutional disorder, more than one tooth is usually affected. The treatment demanded is a strictly temperate and cooling regimen; this, as a rule, will be all that is required. The same means may be resorted to with an application of ice-water to the gums when the exciting cause is an adjoining diseased root, but in nine cases out of ten the only cure is the removal of the root. The progress of the malady does not always stop at this inflammatory stage without the intervention of the dentists' aid, although it is possible for inflammation to terminate naturally by resolution, this very rarely happens. It is very easy to write with a certain amount of assurance on such a subject, but even the most skilful operators and most experienced practitioners are sometimes disappointed in the anticipated results of their treatment, which too frequently happens from the want of proper care on the part of the patient. During the early stages of inflammation the capillaries of the pulp are gorged with an excess of blood, and there is increased exudation of liquor sanguinis and of white blood corpuscles. Stagnation, occlusion, and breaking down of the vessels follows, and this, with excessive cell proliferation and breaking down of the pulp tissues, constitutes what we know as suppuration. When purulent matter has formed, its progress if not checked is steady in its course, and may escape through the cavity and body of a carious tooth, but if the cavity be stopped or occluded the pus is naturally hemmed in. In the latter case the purulent formation is rapid, causing tension and extreme pain and inflammation of the periosteum, which thickens and also suppurates, and in turn adds its portion to the already putrid secretion forcing its way through the foramen of the root into the alveolus, and changing the pathological character of the tooth as well as the pus. The pus passing through the root forms in a sac at the apex, where it continues to accumulate, and while doing

so presses upon the surrounding tissues and walls of the alveolus, and is termed alveolar abscess. As the parts swell the pain is more bearable and is characterized by soreness and elongation of the tooth, redness of the gum, and swelling of the cheek. So long as the disease is there the pus will continue to accumulate, and will force an outlet at the weakest part. The opening that gives egress is frequently outside the gum at the apex of the fang; again, the pus may escape by the side of the alveolus, or beneath the floor of the mouth, and pass out externally by the lower part of the face or in the neck. When in connexion with the upper jaw the pus may pass into the antrum, or escape through the roof of the mouth, or it may even burrow deeply, affect the base of the brain, and cause death.

I need not recapitulate a string of supposed remedies for alveolar abscess. Therapeutically, no single agent possesses such remedial properties as does pure carbolic acid. For the treatment of alveolar abscess there must be such operative measures as will permit the escape of the matter either through the gum or the hollow of the tooth, with complete removal of the dead pulp and sundry applications of pure carbolic acid. Carbolic acid, when applied for alveolar abscess, should be passed into the cavity of the abscess through the root, or through a hole in the alveolus at the apex of the fang. This dressing should be applied every day until the discharge ceases. The root and crown of the tooth may then be filled. This treatment will ensure a fair amount of success. At the same time the systemic condition must not be lost sight of, for, if the patient be of a strumous or otherwise unhealthy constitution, the same beneficial result cannot be relied upon. The most speedy cure in such cases is the removal of the tooth, thereby sending the patient home in the almost certain hope of a rapid recovery, and at the same time giving the operator a great amount of satisfaction that he has got rid of a troublesome case.

Replantation of Teeth.

THE substance of the following case has been communicated to us by Mr. Robert Burch, of Saffron Walden.

Having a bearing upon the subject of a paper in our last issue, on the Forcible Removal of Teeth and their Replacement, by Mr. G. J. Williams, these notes, which are authentic, will not be without interest.

In the summer of 1849 a lad æt. 14 was kicked in the mouth by a nag, knocking out the upper central incisors and breaking off the right upper lateral tooth. The displaced central teeth were found among the straw in the stable where the accident happened. Taking these with him, the boy walked five miles and called upon Mr. Burch. This gentleman caused the patient to rinse his mouth with warm water, and, without further treatment, he replaced the central incisor teeth in their sockets, which had been minus their occupants for two or three hours, firmly pressing them home. A piece of soft cedar wood was fitted to the mouth so that all the teeth had an equal pressure upon it. This he wore for four or five hours, and Sp: *Aetheris Nitrosi* was a few times applied to the gums. About five years ago—23 years from the time of the accident—the patient again turned up with his upper central incisors still present, and no defect or discolouration could be seen. The patient said he had the same feeling and sensation in them as in his other teeth; he could bite anything with them; and that they were none the worse for having being knocked out.

Mr. Burch's opinion is that great care must be taken to have soft wood for the wedge, and that it should be carefully fitted to the bite so as to be quite steady and to bring equal pressure upon all the teeth.

Preserving Decayed Teeth by Filling.

By L.D.S., TORONTO.

THE writer of this article concludes that it is in cavities occurring on the proximate surfaces of bicuspid and molars that by far the largest proportion of failures occur from inefficient treatment.

Two methods have been in practice in this country; one to make with a V shaped file a free opening between the teeth, wide at the cutting edge and tapering to the cervical wall of the cavity—then filling the cavity flush with the walls thus formed.

The other has been to separate with a wedge or flat file, or both, and then removing as little as possible of the over-hanging comparatively sound enamel, to fill from the approximal surface and trim off flush with the vertical wall formed by the file. There are very strong objections to both these styles. In the first not only is the appearance of the teeth rendered unsightly, and an opening left which gives great annoyance in mastication, but the teeth will come in contact at precisely that point where the enamel is thinnest and least capable of resistance, and when in most cases it is further weakened by the cavity extending behind it, leaving but a thin wall intact. Under these circumstances further decay at this point sooner or later is inevitable. In the other the antagonizing surfaces of the teeth, with the fillings inserted being scientifically "trued up" with the file, approach each other and come together with a "perfect fit" over their whole surface. What is the consequence? Instead of a single point of contact, whence the decay originally spread, we have now the whole margin of the partially devitalized enamel surrounding the fillings in contact, under circumstances the most favourable for further decay, and the most perfectly inserted filling must in a comparatively short time become loosened and the cavity very naturally enlarged.

In some cases, it is true, that either from the extent of the separation or from a peculiarity of occlusion, the teeth thus filled do not come together. In these cases when the excavation has been thorough, and the filling skilfully inserted, the operation is durable, the only drawback being, that the opening thus formed between the teeth is a never ending source of annoyance to the patient, from the facility with which particles of food become lodged in it, giving pain and discomfort by their pressure on the gum.

The question arises how can a more hopeful operation be performed? We think by an essentially different course of practice. Accepting as true the theory advised by Dr. Garretson that the mucous membrane covering the primitive dental papillæ in a modified form, continues to exist after the teeth are fully formed between the enamel and the dentine, and that it is through this membrane that the enamel receives the nourishment which is conveyed from the pulp through the dental tubules, it follows that enamel

deprived of the subjacent dentine and of course of its nutrient membrane, by caries, becomes exceedingly brittle, the brittleness increasing as you recede from the intact dentine. From this view of the case we consider it desirable to cut away on all sides of the cavity all overhanging enamel, after having separated with wedge or other appliance when necessary. Secure the future stability of the filling by cutting retaining grooves in the dentine, and for this purpose, even when the cavity is small, cut down from the grinding surface of the tooth. Introduce the filling from the grinding surface and in such a manner that when finished smoothly with a convex surface it shall present as nearly as possible the original size and form of the tooth. When the teeth come together the point of contact is where nature placed it, extending from nearly the grinding surface from one-half to one-third the length of the crown of the tooth. The substances in contact are the indestructable filling. The margins of the cavity are of strong, vital, enamel and are in the most favourable conditions for cleanliness. By thus treating this class of cavities we think we can arrest the decay, and at the same time remove its predisposing cause with the best prospect of permanent success.

We do not ask any one to accept our theory or adopt our practice. We shall be quite satisfied if the suggestions thrown out induce such reflection and discussion as shall add something to our knowledge of Dental Science.
—*Canada Journal of Dental Science.*

Venomous Animals.

By SIR J. FAYRER, K.C.S.I., M.D., F.R.SS. L. and E.

(Abstract from "*Edinburgh Medical Journal.*")

(Continued from page 191.)

THE viperine and crotaline snakes are remarkable for their broad arrow-shaped heads, often without shields, their thick bodies, and short tails. They have thick, swollen looking lips, from the large fangs underneath them; and the nasal pits in *Crotalidæ* are very conspicuous. The *Hydrophidæ* are recognised by their compressed bodies and tails. Their peculiar heads, which in some species is very small, the valvular nostrils, and the absence, except

in one genus, *Platurus*, of ventral scales. They are obviously aquatic, and are always found in the sea or on the shore.

Amphibia.—None are known to possess a poison apparatus like that of ophidia, but toads and salamanders secrete a fluid in glands along the back, connected with the integument, which yields an actively venomous principle capable of causing local irritation, and, when injected into the blood, death, preceded by symptoms indicating action on the cerebro-spinal nerve-centres. Dogs seizing the toad, *Bufo vulgaris*, have been observed to suffer from swelling of the lips and salivation; and a case of death is related in a French journal, 29th March, 1865, of a child in whom an abrasion of the hand came in contact with the secretion of a toad; death was preceded by vertigo, vomiting, fainting.

Injected into guinea-pigs, small birds, and other animals, violent symptoms and death soon follow. It is a viscid, milky fluid, with a slight yellow tint and peculiar odour; it is exuded, or may be pressed out from glands behind the orbits. Zalesky has shown that the land and water salamanders, *S. maculatus* and *Triton cristatus*, and probably others, have also the power of secreting the venom, and his experiments prove that it contains a very active principle—salamandrine, and that its action on the cerebro-spinal nerve centres is energetic.

It appears that these poisons, like those of ophidia, though effective on others, have no action on their own species. It is probable that all species of these families have the same active principle in their glandular secretions, though in different degrees of intensity.

Pisces.—Several fishes are provided with an apparatus consisting of a cavity at the base of, or a sac and duct leading to a channelled spine, through which a more or less irritating secretion is ejected. No true poison gland, however, has as yet been certainly made out. This secretion is apparently connected with the secreting mucous system, and it is well known that in certain species it produces marked symptoms of poisoning, though never to the same extent as in the case of the poison of venomous snakes.* Fish armed with sharp or serrated opercular or

* Experiments on the action of this poison are needed; it is probable

fin spines can inflict severe and painful injuries liable to cause great pain, and to be followed by the grave symptoms attributable to the lacerated or punctured nature of the wounds, and these may be aggravated by the irritating nature of the mucus with which they are contaminated. In several, however, in addition to the spine there is a distinct receptacle in connexion with it, either in the form of a sac or duct, such as in *thalassophryne*, in a cavity in the spine itself, as in *trachinus*.—*Weever*.

In the case of others, such as the sting rays, which may produce severe wounds by their pointed and serrated spines, there is no distinct receptacle for the poisons in connection with them. The ill effects of such wounds are so well known to fishermen and others, that the spines are generally broken off as soon as the fish is caught; and in France and Spain fishermen are obliged by police regulations to do this before the fish are exposed for sale. Whilst it is well known that many spiny fish are capable of inflicting wounds that are dangerous from their lacerated and punctured character, it is recognised also, that others increase the danger by the inoculation of an irritating fluid; and the following are the most remarkable among them (*Day*):— * * * * *

Rays.—The latter sub-class are capable of inflicting severe wounds, but it is doubtful if there be any poison inserted into the wound. Probably there are others that are capable of inflicting severe envenomed, others merely lacerated or punctured, wounds. It is sufficient to indicate the certain danger of some, and the probable danger of other spiny fish. There is no ground for supposing that there is any poison apparatus connected with the teeth of fish. The effect of the poison is to produce severe burning pain at and beyond the injured part, with fever, and the intensity would, no doubt, depend on the quantity of poison injected, and the state of health and constitution of the person at the time. The wound alone, without any poison, is likely to be painful and severe from its punctured character; and may require means to relieve tension, evacuate pus, or give exit to sloughs.

Ipecacuanha, *alkalis*, *alum*, *ammonia*, have all been recommended as useful internal applications to allay the

that in its action and composition of its active principle it would be found to resemble that of the salamanders.

irritating action of such poisons. Poultices of onions, or warm applications of opium or other sedative fomentations, are likely to be useful; and prompt surgical relief, if suppuration or cellulitis occur, is necessary.

The constitutional treatment needs no special description; it is such as would be indicated by the condition and progress of any other inflamed punctured wound. In case of depression of the heart's action, alcohol or ammonia would be indicated. Rest, quiet, and due attention to the state of the bowels and of elimination by the skin and kidneys, with careful regulation of the diet, should be observed.

INVERTEBRATA.

MOLLUSCA.—*Aphysia punctata*, the sea hare, a gasteropod, is said by some to produce an irritating secretion capable of causing urtication and even severe inflammation, and of causing the hair to fall off. It was used by Locusta in Nero's time as an ingredient in poisonous draughts, but it is doubtful if it be even an irritant.

ARTHROPODA, MYRIAPODA, family *Scolopendridæ*, or centipedes.—Body long, even to 12 inches, divided into horny segments; legs short, strong; feet numerous; antennæ 17 to 20 joints. They have mandibles or nippers, formed by a pair of dilated feet, joined at their origin, with perforated, hook-like points with an aperture near the apex, through which a poisonous fluid, secreted in a poison gland, sac, and duct, is ejected when they bite, which they can severely. This, in the case of the larger tropical species, is sometimes very painful, and causes considerable local irritation and even constitutional disturbance, and fever and delirium. Dr. Linceicum says that he saw a case of a child terminate fatally in six hours; nausea, vomiting, and convulsions preceded death; body swollen and covered with livid blotches. That of the smaller kind generally causes only local and transient irritation. Centipedes are found all over the world nearly, in Europe and Africa, America, the East and West Indies and Islands, and in the tropics generally. Those of warm climates are the largest and most dangerous.

ARACHNOIDEA.—*Scorpionidæ* or *Pedipalps*.

Scorpiones (true scorpions).—Have the abdomen segmented, the last six joints narrowed into a tail, terminated by a curved perforated spine or hook, with which they

strike and wound. At its extremity are two small orifices, through which venom is injected from a gland receptacle and duct at its base.

The palpi are large, and formed like the claws of a lobster. Scorpions run about very quickly, carrying the tail curved over the body. They live in holes in the ground, under stones, logs of wood, in dark places. The tail is used as an offensive and defensive weapon. They seize small creatures, insects, with the palpi, and then pierce them with the sting. The venom is so active that it quickly destroys life.

Those of tropical climates are most active and poisonous. They attain to the length of from two to three, four, and six inches. The European genera are smaller and less active.

The effects of the scorpion's sting and centipede's bite have no doubt been exaggerated, but they may produce very painful, and in the case of the larger species, severe and serious symptoms in their character, not unlike, or even more severe than those of the wasp sting: pain, swelling, in some cases numbness, vertigo, nausea, vomiting, temporary loss of vision it is said, swelling of the tongue, fever and death in delicate and feeble or sickly subjects. The local and constitutional symptoms may be severe in persons of irritable constitution, or otherwise out of health, but generally in the case of bites of ordinary scorpions or centipedes inflicted on healthy subjects, the suffering is local and soon passes away.

It is a popular notion that the scorpion loses its venomous power after being at sea for a short time. This is probably not the case.

ARACHNIDÆ.—*Spiders*.—Some spiders are venomous, and certain of the larger tropical forms are capable of inflicting painful bites. The poison apparatus of spiders consist of falces or modified mandibles or jaws, the last joint of which is a hard curved fang, with a fissure near the point; there is an elongated poison sac and duct in which the venom is elaborated, and thence transmitted to the fang, by which it is inoculated into the flesh of its prey. The venom is a very active principle, and apparently capable of destroying the life of the small creatures on which the spider feeds rapidly. It also causes symptoms of poisoning in man and other animals. Probably all the species have some ven-

omous secretion, but it is only the larger kinds that are obnoxious to man. It may be noted that whilst the fangs of one section of spiders move laterally, those of the *Mygalidæ* move vertically.

The *Mygalidæ*, or mouse spiders, grow to a large size. They are covered with a felt of hair, have vertical fangs, are very fierce, and are said to kill and eat small birds.

There are numerous families, genera, and species of spiders; in all, probably, evidences of the possession of an irritating fluid may exist, but it is only in the larger kinds that they do so to any extent, and there is no very positive proof that even in tropical climates they can inflict the grievous injuries ascribed to them, though there can be no doubt that the venom is very fatal to the creatures on which they prey.

Acarina or *Mites*.—Some families of the *acarina* have individuals that have the power of causing considerable irritation by some secretion ejected on the surface, or injected into the wounds they make, in their burrowing operations with claws or mouth.

Hemiptera or Bugs.—*Geocorysæ* and *Hydrocorysæ*, land and water bugs.—Some of these have irritating properties, and also offensive odour; they have a suctorial mouth armed with a grooved instrument or rostrum for piercing the skin.

Cimex lectularius the bed bug, causes much irritation, and in some persons inflammatory action in the bitten part. The effects are transient.

Notonecta, the water boatman, and *Nepa*, the water scorpion, common in pools of water in our islands, are also capable of inflicting a painful puncture.

Kirby and Spence speak of the *Cimex Nemorum* as causing nearly as much pain by its puncture as the sting of a wasp.

The wheel bug, *Reduvius serratus*, of the West Indies, gives an electric shock to the person it touches. St. Pierre mentions a species of bug in the Mauritius whose bite is as venomous as the sting of a scorpion.

The *Benchucha*, or great black bug, of the pampas of South America, is more obnoxious, it is said, than the common bed bug.

Aphaniptera.—*Pulicidæ*, or Fleas.—There are several families of this order. It is only necessary to refer to

Pulex irritans,—the universal common flea. It varies much in size and colour; some are almost black and very large, and are found on the sandy shores of the Mediterranean. There are many species, such as *P. canis*, *P. musculus*, *P. vespertinus*, and others. *Pulux penetrans* of West Indies and South America, known also as the jigger or chigoe. It penetrates into the skin, and beneath the nails generally of the feet, causing great irritation. It will, if not extracted, deposit its ova, and thus give rise to severe irritation. The effects of the ordinary flea-bite are well-known. No special treatment need be described. Prevention is better than cure. Though the irritation of flea-bites is chiefly due to the wound, there is reason to believe that this is aggravated by the presence of some irritating secretion.

Orthoptera are probably all free from venomous properties.

Diptera.—To this order belong the gnats. Mosquitoes, pipsas, sand-flies, gad-flies, are more or less dreaded for their bites. They have a proboscis composed of a grooved and flexible sheath, through which long, slender, sharp darts are protruded that pierce the skin, and no doubt inoculate some venomous secretion, though its nature is not known. They draw blood, raise white lumps or swellings; some, such as the pipsa of the Cossiah Hills, India, leave a livid spot of effused blood, that gives the person the appearance of a purpureal rash. They swarm in many countries, especially the tropics, generally near water. But they are not by any means confined to the tropics. Lapland swarms with them, the principal forms are the *Culex pipules*, *C. reptans*, common gnats, *C. mosquito*, *Culex laniger*, the mosquito, the flies, *C. tabanus*. Some of these are formidable insects, and are insatiable blood-suckers. The tsetze or timb, *Glossina morsitans* of Africa, is one of the most remarkable. The bite of this poisonous insect is almost certain death to the horse, ox, or dog; though it appears not to trouble man more than to cause slight irritation, which has no further effect on him, though in a few days the animal sickens and dies.

Oestrus, or the gad-fly, is troublesome to animals; but it does not, as a rule, molest man. Poisonous properties doubtful.

The *Tipulidæ** are for the most part harmless, though one of them, the Hessian fly, *Cecidomyia*, is dreaded for its destruction of grain and wheat.

The *Simulium*, or Sand-fly.—The females only are irritating to man, the bite often giving rise to painful swellings. These insects, especially mosquitoes, are the pest of many countries, not only tropical, but even in Europe, and render it necessary that, to procure sleep, the person should be protected by a curtain.

The pipsa is probably a *simulium*. It appears from the great irritation and the white hard swelling that follows the puncture of most of these insects, that some acrid secretion is injected into the wound.

In young full-blooded persons, especially recent arrivals in India or the tropics, the irritation caused by mosquito bites is often so severe as to give rise to violent inflammatory symptoms, resulting in suppuration or ulceration, and even gangrene, risking loss of limb, perchance of life. The application of common salt, solution of ammonia, soda, potash, lead, oil, ipecacuanha, alum combined with opium, allay irritation in the first stage. The more violent inflammatory symptoms are amenable to ordinary surgical treatment. Camphor, pulegium, lime-juice, applied to the skin are all regarded as preventatives.

Hymenoptera.—A number of species that secrete poison are found among the different families of hymenoptera, the bees, wasps, ants.

They are distinguished from other insects by the presence of an ovipositor at the extremity of the abdomen in the female, which not only is used for depositing the eggs, but is in many species as a weapon for injecting venom. It consists of five pieces, two valves as a sheath, and three bristles which form a grooved sting. Through this groove formed by these three pieces the egg is passed, and the poison flows, or is injected into the wound. Those that use it for that double purpose are known as the aculeate hymenoptera. In these the ovipositor becomes a sting by being connected with a poison gland at its base.

Formicidæ, the Ants.—*Formica smaragdina* and many others.—The sting of the ant causes considerable irritation,

* A small species of *Ceratopogon*, one of the midges, is of this family, and is often annoying in our islands.

especially if the persons have been attacked by many. It has been suggested that formic acid is the irritating principle. There are several venomous varieties and species of ants, black and red, and they are of various sizes. Some of the larger forms in the tropics are capable of inflicting a very painful injury. Some ants have no sting, but eject a fluid which irritates the skin with which it comes in contact. They are sociable insects, and are apt to attack in numbers.

Vespidæ.—The Wasps, Hornets.—The females and workers of *vespa* are provided with a poison sac and sting.

Vespa vulgaris, a type of the tribe Crabro. It lives in communities, which are very numerous. Its sting produces much irritation, pain, and swelling, especially when inflicted on the face, or where the cellular tissue is loose. When they attack in numbers the consequences may be severe.

The *Apidæ*, or true bees, or the *Bombidæ* or humble bees, have similar properties, and their sting has very much the same effect as that of the wasp.

The stingless honey bee, found both in the old and new world, is, as its name implies, harmless. Some of the parasitic Hymenoptera also inject a poison into the wound made by their ovipositor. The best known instance is that of the genus *Orphion*. The genus *Paripla* also injects a poison in the same way, and probably others of the *Ichneumonidæ* do the same.

Many remedies of a simple nature have been recommended to allay the pain and irritation caused by wasp and bee stings. Vinegar, eau de Luce, ammonia, solution of soda or potash, oil, indigo, eau de Cologne, alum, and all those recommended in scorpion stings, have been vaunted as useful. In case of venomous stings, where constitutional disturbance is induced, stimulants or sedatives may be necessary, and as the sting is liable to be left in the wound it out to be picked out. In cases of wasp or bee stings in the mouth or throat, which may happen when children bite a peach or other fruit that conceals a wasp, severe consequences may arise from the oedema that supervenes, and extends to the glottis. An emetic is useful. With the ordinary treatment of oedema, laryngotomy may become necessary. In other cases, should violent symptoms supervene, surgical aid may be required to relieve tension, or give exit to matter. Such untoward results, however, are happily rare.

Brink says that *Mutilla coccinea*, a native of the warmer parts of North America, is said to produce loss of sense within five minutes after the infliction of its sting, and that life is in danger for some days afterwards.

Lepidoptera.—Burmeister says that the majority of insects furnished with a sting, as a means of defence, belong to the Hymenoptera. It is but recently that a stinging Lepidopterous insect has been found. The species is not mentioned.—(*F. Smith*). The bee moth of the Cape of Good Hope is said to defend itself with a sting.—(*Kirby, Spence*). Though the majority of the perfect insects of this tribe are harmless, some of the caterpillars appear to be possessed of very irritating properties, residing in the fine hairs with which they are cased, and which, being sharp and brittle, break off and remain on the skin with which they come in contact, certainly causing irritation mechanically, but also probably by the presence of some acrid substance concealed within the hairs. For instance, in Ceylon, a greenish hairy caterpillar, longitudinally striped, frequenting the leaves of *Hibiscus populneus*, probably of the genus *Bombyx*, which, alighting on the skin, causes as much irritation as the sting of a nettle. The larvæ of *Neæra lepida*, which feeds on the jasmine flowering *Carissa*, have similar properties. It is short and broad, of a pale green, with fleshy spines on the upper surface, each of which is charged with venom that occasions acute suffering. The larvæ of the genus *Adolia* are also armed with venomous hairs. There are probably many others. One, not uncommon in certain trees in the terai of Himalaya, is a dark coloured hairy caterpillar, that is apt to fall on people below and cause intense irritation. It is known as the Kumlah, but the moth that produces it is not known.

Neuroptera, apparently, are free from venomous properties.

Coleoptera.—None are known to be injectors of venom, but there are several that have acrid secretions capable of exciting great irritation and inflammation, raising blisters, and if absorbed causing painful strangury and great urinary irritation. Such are *Mylabris Cichorii* of India, *Cantharis* or *Lytta*, or *Meloe vesicatoria*, *Lytta gigas* of Senegal, *Lytta vitata* of America, and *Lytta ruficeps* of Chili.

The *Brachinus*, or bombardier beetle, seems also to be

provided with an acrid secretion, which it ejects against its prey; it is not, however, obnoxious to man. The nature of the action of the *Cantharis* is so well known that it is needless to describe it here.

Crustacea have no poisonous representative.

Vermes has no venomous species. The Leeches: *Hirudo*. Many species inflict a wound which in hot, damp climates may give rise to inflammation, causing a troublesome sore, but there is no reason to believe that they possess any venomous properties.

Echinodermata.—The long sharp pointed spine of some of the *Echinida* are capable of inflicting painful punctured wounds, but they convey no true venom into the wound. Whether, as in the case of some spiny fishes, there may be an irritating mucous secretion inoculated is uncertain.

Cœlenterata.—Some of the *Medusæ*, jelly fish, have the power of stinging. The poison apparatus is placed in certain tubercles on the surface. These contain a collection of granules, amongst which are small vesicles. Within these corpuscles or nematocysts a spiral thread is found, which bursts out on pressure. These corpuscles are found in the mucus exuded by the creature, and to these is attributed the urticating power it possesses. There are several stinging species, some are found on our own coast, others in other seas. It is the larger forms generally that are venomous, the small ones, if they are so at all, having no effect on man. *Cyanea capillata* of our seas, says Professor Forbes, is a most formidable creature, and the terror of bathers. It has a broad tawny disk, and a long train of ribbon-like streamers floating after it; it flaps its way through the waters, and whatever comes in contact with these trailing trains soon writhes in torture, the effect produced being not unlike that of the nettle.

Physalea pelagica, Portuguese man-of-war, has similar properties. It causes severe and stinging pain, extending up the limb, with feverishness, which has been known to continue for some hours, white wheals forming on the skin, like urticaria. The application of vinegar or olive oil is said to remove the unpleasant symptoms. Several of the medusæ possess these properties, and hence they have received the name of *Acalephæ*, or sea nettles.

There has been difference of opinion as to the functions of the thread cells. Some think that they are agents by

which the poisoning is produced, by penetrating the tissues. The threads being armed with a sharp barbed spine infect the puncture into which the poisonous secretion is injected. Others reject this explanation. Allman thinks that there is penetration; the sudden ejection of a barbed sac against the soft tissues of the prey, which if these be soft enough allow the point of the sac to penetrate as far as the roots of the barbs, the act is followed by the ejection of the filament, for which the barbed sac has opened a passage.

He thinks it is impossible that the effects which follow can be produced simply by mechanical irritation, but that some virus is injected. That the creature can sting there can be no doubt, though the exact process by which it is effected may be uncertain.

The *Actinæ*, or sea anemones, and the hydroid polyps, appear to possess a similar power, and are provided also with thread cells. They appear to be able to paralyze the small marine creatures that come within their grasp, or to cause urtication of the human skin when brought in contact with their tentacles.

The *Sagartiadæ* furnish examples of sea anemones with this property. The effects, however, of any of them are transient. In some parts of Europe or Norway the *Acalephæ* have been used therapeutically as counter-irritants, and being brought in contact with the patient by immersing him in salt-water bath filled with these creatures.

It is by no means pretended that in the preceding description the subject of venomous animals has been exhaustively treated, or that all the forms of animal life so endowed have been described. The object has been to point out the principal forms, and to indicate generally the mode of dealing therapeutically with the effects of the venom.

The Development of Dentine.

By C. SIHLER, M.D.

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THE view then at which I have arrived, after investigating the dead and living dentine, as to the structure of this tissue is 1st, the essential parts of the living and growing dentine, the oval elements or pink bodies with their nuclei

attached to the opening of the dentinal canals, and in direct connection with the dentine. 2nd. There can be recognised in this tissue the dentine, as can elsewhere, the germinal matter or bioplasm and the formed matter. The former has been pointed out by the staining, and has been shown that it exists in the dentinal canals, the odontoblasts and their nuclei. The latter, *i.e.*, the formed matter we have shown to consist of two kinds of substances, by the aid of muriatic acid: First, a homogeneous one in which the limesalts are infiltrated; a second one, of the nature of yellow elastic tissue substance, making up the walls of the dentinal tubules, and being in continuity with the odontoblasts. That it is prolonged into (or on) bioplast, we have shown by isolating an odontoblast while in connection with the dentinal tubules; and that this process of the odontoblast is not altogether germinal matter, or merely a semi-fluid soft mass, can be proved by the stretching it will permit. Where the germinal matter ends, and the formed matter begins, is just as difficult at times to say, as where day ends and night begins, for one must always bear in mind in using the term, that the distinction made between forming substance or bioplasm, or germinal matter, and formed matter is a termination not made according to the idea (category) of form and appearance or locality, but according to the idea of force or substance. Hence, we may have particles of formed matter and particles of germinal matter mixed up. The body of the odontoblast and the material in the dentinal tubules, seem to me to be of this nature, *i.e.*, mixed, while the nucleus seems to me to be active bioplasm. In making histological investigations, one must not forget that one is interrupting nature and interfering with processes. I look upon the odontoblast as though here the germinal matter was being converted into formed matter, and was being separated into the elastic material, which when condensed, will make up the walls of the tubes and side tubes,—and into the homogeneous glue-like substance making the general matrix of the dentine, and I look upon the contents of the dentinal tubes which can be stained, as upon germinal matter where change into formed matter is slowly going on, while the nucleus, I consider, as the agent which converts pabulum or food into germinal matter.

. This view of the structure of dentine will agree with

that of Beale, if Beale will admit that there is a special wall to the dentinal canal, which is a direct production of the germinal matter, as the fibre of the ligamentum nuchæ is a production of the bioplasts attached to it, and which is made *pari passu* with the general glue-like matrix of the dentine.

This view will agree with that of Salter, if Salter will call his "thick fluid" in the dentinal canals germinal matter, and admit that he does not prove the calcification of the dentinal tubes.

This view will agree with that of Waldeyer, if Waldeyer admits that his dentinal sheaths and the fibres which he describes as possessing a remarkable elasticity, are one and the same thing.

This view will agree with that of Koelliker, if Koelliker admits that his dentinal tubules (Neumann's sheaths) and his processes of the odontoblasts are one and the same thing.

This view agrees with that of Tomes, if Tomes will admit that he fails to prove that there is a dentinal tubule, and admit further that his soft fibril is one and the same with the dentinal tubule.

These three views will agree with mine, if they will allow me to call the contents or inner portion of their soft fibril bioplasm—if they allow me to call the outer portion of their fibril the dentinal tubule, and the material which, according to their own statements, can be stretched so much, yellow elastic tissue substance.

These same arguments, it will be noticed, we have used above in proving the presence of the dentinal tubule, and have found the same appearance in dead teeth. We have seen, when describing the nature of the dead and dry dentine, that a tubule and a fibril cannot be distinguished one from another by merely being seen especially along their sides. Further, we have shown that, by decalcifying, the fibrils apparently drawn out from the dentinal canal (I do not say tubes) are identical with the tubes themselves, and all the phenomena described by Tomes can be produced by tubules as well as by fibrils.

Tomes quotes Koelliker, who gives facts supporting our view, but I fail to see that Tomes either sees the point or refutes it.

If any one else understands why Tomes quotes Koel-

liker, he accomplishes more than I can. To me it appears that this quotation might have shown to Tomes that it is impossible to recognise his soft fibril, that the arguments given to support it will support Koelliker's and Lent's views a good deal better than his own.

I have to remonstrate as regards Salter. I am by no means convinced that the dentinal tubule is calcified. There is no proof given, and, from the very nature of the material of which the elastic tissue is composed, I think it must be uncalcified. As far as 2,000 years are concerned, time is nothing, and we know that muriatic acid speedily dissolves the homogeneous matrix, and for quite a time seems powerless against the tubes; and, further, the very existence of a tooth speaks for the possibility of the presence of the yellow elastic, which can stand certainly more acid and alkalies than the glue or intertubular matrix of dentine, and if it can stand more of chemical action, why not more time? The limesalts are not such powerful preservers. I must object to simply calling the contents of the tubes fluid, dense plasma, and to saying, after describing the tubes and intertubular substances, "no other element enters, etc.;" that is reasoning just as if one did not recognise the nucleus in a liver cell, or the connective tissue corpuscle in fibrous tissue, or the nuclei in muscle and nerve. As far as the description of the formation of dentine is concerned, it is good enough as far as it goes, but does not mention the formation of the side tubes.

But Tomes gives some other facts, some of which Salter also quotes, which are of importance. He says: "If a fibril be examined in its natural condition, by the aid of a $\frac{1}{4}$ th object glass, it will be found to consist of an almost structureless tissue, transparent and of a comparatively low refractive power. In glycerine the fibrils are scarcely visible. At present it admits of doubt, whether they are tubular or solid. In some cases there is an appearance of tubularity, but, being cylindrical, this may be a mere optical effect. When accidentally stretched between two fragments of dentine, the diameter of the fibril becomes much diminished, and when broken across, a minute globe of transparent but dense fluid may sometimes be seen at the broken end, gathered into a more or less spherical form. These appearances may be explained by assuming that the fibril consists of a sheath, containing a semi-fluid matter similar to the white fibrillæ of nerves, etc."

It is somewhat surprising to see Tomes calling a thing which can be stretched so much as it can, and of diameter which is diminished by stretching, and which seems to contain a dense fluid, a soft fibril. The trouble with Tomes' description of dentine is that, at first, he assumes the dentinal tubes, then, when he comes across them in reality, he takes them for something else—namely, fibrils. I think it will be noticed that his dense fluid in his soft fibrils corresponds to the germinal matter in the tubes, his soft fibrils, or, more accurately, the outer dense portions of his fibrils are our dentinal tubes.

Koelliker, who, if I understand him rightly, had entertained similar views as Salter on dentine, has changed his views in the last edition of his work on histology, and, on page 336, says: "Although I had been the first one who had isolated the dentinal tubules to a great extent, I was afterwards misled, after Tomes had described a soft fibril in every dentinal tubule, to take the tubes which I had produced and those fibrils for one and the same thing, against which identification Neumann raised objections. He showed, in a most excellent little work, that the dentinal tubules had special calcified walls (dentinal sheaths, Neumann), and that these contained in their interior a soft fibril. (Tooth fibril, fibre of, Tomes). Although recently H. Hertz has adopted my later views, I cannot but think that Neumann is in the right." The arguments are: 1 "If, by boiling in caustic potash of sections of teeth, or by prolonged putrid maceration of whole teeth, the soft parts of the teeth are destroyed, the walls of the dentinal canals can, after the removal of the limesalts, be brought into view by aid of the measures which I mentioned, while the fibrils can in no way be shown.

Here I would ask, 1. How can one know at what time all the soft parts are destroyed? 2. What is really meant by soft parts? 3. Cannot some uncalcified substances stand as much chemical action and time as some calcified ones?

I have found that when I treated my sections with caustic soda until I thought that all the soft parts were destroyed, that the whole section melted down before the hydrochloric acid like ice in warm water, and as far as putrefaction is concerned, that is a little doubtful manœuvre, for in decaying teeth—where we are sure that

putrefaction is really at work—we see that the whole of the dentine, sheaths and all is destroyed. The very existence of a tooth proves that putrefaction has not been going on very intensively. If one exposes, for example, the pulp and pericementum to caustic soda, and boiling that, or to strong muriatic acid, he will find that these “soft” tissues, although soft in a certain sense, have properties which make them persistent.

The second argument of Koelliker to prove his statement:

“2. The elements isolated by Neumann and myself can, as I have said from the beginning, plainly be distinguished as tubules.”

I have no doubt at all that these elements are tubules, but I cannot see that their calcification is in any way proved by the arguments so far.

“3. Upon the examination of dentine which is undergoing formation, it is found that every forming cell (odontoblast) sends a soft fibril into the interior of the dental tubule (Lent. I. Neumann), and there can (Neumann) be shown with the aid of muriatic acid, besides these fibres, also the dentinal sheaths.”

Here I would again like to ask why Koelliker quotes Lent, Neumann and himself in proving the existence of the fibril as a process of the odontoblast, and Neumann only in proving the existence of the sheath aside of or with the fibre?

This argument is nothing further than a repetition of the proposition to be first proven, and every one has of course a right to disbelieve this statement until the exact method is given how such facts can be obtained. I have made a section through the root of a developing tooth so very thin that there was to be seen but one layer of tubes as it were, and in front of a small number of canals the odontoblasts were still attached, while in the greater portion they were detached. This section I exposed to the action of strong muriatic acid; after this had operated long enough to dissolve all the homogeneous matrix, I found as many fibres apparently as there were canals before, and where there had been an odontoblast, this was connected with a fibre or tube. Of course, where there had been no odontoblast attached, there the fibre or tube ended where the dentine had ended before. Now where are the sheaths of Neumann, together with the fibril of Tomes? The process

of the odontoblasts are either the one or the other, or are we to call those where the odontoblast is detached the sheaths of Neumann, and where it is not detached the fibre of Tomes, so that all the investigators may have the honour of some discovery.

Of course with carmine one can prove that within the tubule, or within the fibre, or in the interior of the fibre there is another kind of substance, and it to that, without the covering, the term soft fibril will be given, I will not object, although it seems an unfelicitous term. But terms I intend not to fight, but to mix up several things and to create two things out of one, that mode of reasoning I cannot agree to.

4. "The same cell processes can also be seen in fully developed teeth proceeding from the cells on the surface of the pulp and entering the dentinal canals, and in longitudinal and cross-sections of decalcified dentine the soft fibres can be recognized *in situ*."

As far as this evidence is concerned it is not at all convincing to me, for decalcification will disturb the structure enough to make observations upon the contents of the dentinal canals a little doubtful, as far as seeing a soft fibril in longitudinal sections, I fail to see how one can see the softness, and how one can fail to see something like a fibre; and as far as cross-sections are concerned, I suppose in fresh teeth of course there is within the tubule, or sheath, or fibre, the material which is stained with carmine, and which is pressed out from the fibril according to Tomes in round drops, and a cross-section will of course not allow an empty tube to appear. But I admit the tube, and I admit its contents, but only cannot see how the sheath of Neumann and the fibril of Tomes can be shown or seen side by side.

5. "On picking to pieces sections of decalcified dentine, fibrils can frequently be seen protruding along the edges. (Tomes) but it is to be taken into consideration that also the dental sheaths can be seen protruding in this way."

Here Koelliker admits himself the possibility of taking a tubule for a fibre, and *vice versa*, and it is not necessary to say any more.

"The fibres easily stain with carmine. They possess a remarkable degree of extensibility, so that especially in young teeth the dentinal cell may be separated to a consid-

erable distance from the dentine, without rupture of the processes, which then appear like harpstrings stretched over the interval. Salter, in recently describing the fibres as tubules, (because when dry they appear to contain air vesicles and exhibit a dark central point on section) had probably the dentinal sheaths under observation. The fibres are really completely solid and homogeneous."

We see here the same arguments, and even Salter's writing did not seem to have made it possible for the writer to consider if his dentinal fibre and sheath were not the same thing. How a fibre can be completely solid and homogenous, and stretched like harpstrings, (Waldeyer) and on rupturing let a thick fluid exude (Tomes) and be stained with carmine—all these properties united make really a remarkable object.

We do not doubt of course that the contents of the dentinal tubes can be stained by carmine, but must we on that account admit that, that which Tomes shows by muriatic acid, fracturing and stretching is the same thing as that which Beale shows by staining? must we admit that because there is germinal matter in the canals there are no tubes there? That would be quite peculiar logic. Of course Beale shows with his method the inner portion of the contents of the canals, which is bioplasm. Tomes shows with his method the outer portion or the dentinal tube, which is certainly not the soft semi-fluid germinal matter, and although in a living tooth Tomes' and Koeliker's fibril contain the bioplasm of Beale, their arguments do not point out the same.

Why Beale calls the so-called wall of the dentinal tube an "artificial distinction," if attention is called to the difference in chemical composition between the homogeneous intertubular mass and the tubules themselves, I cannot understand. If nature uses something of the nature of leather, and something of the nature of glue in the construction of her apparatuses, why have we not a right to recognise both? Beale makes distinctions by the aid of carmine between formed and germinal matter; why are we forbidden to analyse the formed matter still further? And why is not the distinction which muriatic acid makes of some value just as well as that which carmine makes?

If it now be asked, how came this variety of theories concerning the nature of dentine, I think it may be said

the reason is that there are only a limited number of facts or observations taken in consideration when the theory is made; and the causes for that are that the general theories of some will not allow a certain number of facts to become prominent, and again, that, by others, other facts are assumed which need proof, and which are then in the way when they appear in reality.

I think the view here given in this paper on the structure will be agreeable to all the facts that have been brought out, and not only that, but, in forming the conclusion, almost every fact was used, and had to be used. There was neglected neither the staining nor muriatic acid, nor stretching the tubules or fibres, nor the dead tooth nor the living and growing tooth, neither longitudinal nor cross sections. This view of the structure of dentine, it will be seen, has its support further in the structure of bone, tendons, cornea, whartons, jelly, and others. For here we have also the yellow elastic substance either in membranes or in fibres, or threads, together with a homogeneous substance between them which differs also in the different tissues being like glue, for example in tendon, and like mucus in the fibrous tissue of the umbilical cord. And as to the direct production of the yellow elastic, we have an unmistakeable proof for that in the development of the ligamentum nuchæ, where there is no other texture formed but the yellow elastic fibre, and where we can see that these are a direct product of the germinal matter which we find connected with them.—*the Dental Register*.

Dental Alloys.

By HENRY S. CHASE, M.D., D.D.S.

DURING the last year I have experimented in the making of dental alloys. I have desired an alloy that would not darken to a disagreeable extent. Some excellent alloys discolour considerably in the presence of acid saliva. The substances of which plugs are made should be, in a measure, as subject to chemical disintegration as the dentos in which it is placed. If an alloy plug darkens on its surface it shows that it has been subject to a chemical cause. To be sure, what may darken the surface of a plug might not injure dentos. For instance, sulphuretted hydrogen might

darken a plug owing to a sulphide of silver being formed. The sulphuretted hydrogen would not disintegrate dentos. But some acid conditions of the mouth will darken the ordinary alloys. Almost any of the alloys, that do not contract, are good preservers, if properly manipulated. Alloys not containing gold are liable to contract, or change their forms in plugs weeks after they have been used, although they may not in 72 hours. Gold controls contraction, and expansion also. It controls also in a measure, discolouration.

As silver is at present indispensable to an alloy plug, more or less discolouration must be expected in some mouths. But, in order to obtain the best results in the present condition of our knowledge, I have instituted hundreds of experiments. I assure you these experiments have required much time and patience, and have resulted in frequent disappointments, during the time occupied. The melting of metals is a simple enough thing; but their union in such proportions as is most desirable is neither simple, nor easy, even after one "knows how." My experiments have at last resulted in three alloys which have been tested both in and out of the mouth many hundreds of times since last October.

I will designate these as Nos. 1, 2, and 3:

FORMULA No. 1.—Gold, $33\frac{1}{3}$; Silver, $33\frac{1}{3}$; Tin, $33\frac{1}{3}$. This is a very quick-setting alloy, becoming exceedingly hard in a few minutes. It requires from 60 to 80 per cent. of quick silver. Chemically pure tin filings may be added to this, if desired, in certain proportions.

To 100 parts by weight of "No. 1," may be added 25 parts of tin filings. The effect is to take a less percentage of quick silver, to delay hardening, and to render the plug less tough. A less quantity of tin filing may be used, but not greater. A greater will make a plug defective by the "tube test."

FORMULA No. 2.—Gold, 25; Silver, 39; Tin, 36. This is less quick in setting than "No. 1," makes a sufficiently hard plug, and requires from 40 to 60 per cent of quick silver. No tin filing can be added to this without injury.

FORMULA No. 3.—Gold, 20; Silver, 40; Tin 40. This is more plastic and requires more time to harden than "No. 2." It requires from 30 to 50 per cent. of quick silver. It will not bear the addition of tin filings.

All of these alloys keep their color remarkably well—even under unfavourable conditions. All stand the "tube test" for not only days, but for months.

None but chemically pure metals must be used. None must be burned out in melting—at any rate, not more than half-a-grain in 100 should be lost in melting, or one-half of one per cent.

To do this requires skill, care, and experience. You can get the experience if you try as many times as I did before I succeeded. I procure a nice piece of charcoal that will not snap. Cut a basin in the end and use this for both crucible and ingot. Melt the gold first, then add the silver, when the latter is fluid, and when mixed with the former add the tin. Stir well with a clean and polished steel wire. Cool as suddenly as possible by holding a cold steel hammer head on the melted surface of the alloy. After filing the alloy into powder, the particles of iron which it contained must be removed by a magnet.

These alloys may be washed while mixing with quick silver. Nothing but alcohol is allowed. They should be mixed in the palm of the hands, and not in a mortar, as less quick silver is required by the former method.

If washed, perfect dryness must be attained before using. This can be done by washing before adding all the quick silver, and by making fine grains of the mass while blowing upon it. After it is dry, the balance of the quick silver may be added.

These alloys are not to be used excepting in dry cavities.

I have freely given you now the results of many months' labour. If you are as successful as I have been in making and using these alloys, you will not regret it. If you fail, you may wish you had never made the trial.—*Missouri Dental Journal*.

Odontological Society of Great Britain.

THE first meeting of this Session took place at the Dental Hospital on the 5th inst., A. Woodhouse, Esq., Vice-President in the chair.

The Secretary, Mr. OAKLEY COLES, read a communication from Mr. Crapper, of Hanley, on Continuous Gum Work, of which the following is an abstract:—

"This system of work was invented in America by Dr. John Allen, about five-and-twenty years ago, and has since been perfected and extensively used by him. He claims, as the result of his large experience, that it is the most perfect and satisfactory system in existence, and that it is especially applicable to perfectly edentulous gums. It has been pretty generally employed by dentists in the United States, but in this country has only been tried by a few individuals. The objections urged against continuous gum work have been—first, its weight, and secondly, the time and trouble required to effect repairs. As to the first, patients do not feel the weight, even though the set replace one made of vulcanite or celluloid, and Mr. Crapper has never heard a patient complain of it. If the plate be accurately fitted, it is kept in place by atmospheric pressure, fourteen pounds to the square inch, without the feeling of suction or dragging on the gum which some have imagined. With reference to the formation of suction cavities in plates, Mr. Crapper thinks that those having sharply defined edges are injurious, and that it is better to graduate them carefully just sufficient to prevent the plate from pressing upon the hardest portion of the palate. The other objection is more serious, and it is necessary to impress upon patients the importance of being careful with their teeth when out of the mouth. Mr. Crapper recommends the use of a wooden bowl for cleansing purposes, as injury may be done by dropping the set into an ordinary wash-hand basin. But this objection does not counterbalance the benefits which in many cases are conferred upon the patient. In cases of prominent alveolus and short upper lip, for instance, where the gum shows very high, the artificial gum can be worked by this method to a thinness unattainable by any other, and a more natural appearance can thus be ensured.

Continuous Gum Work requires in the making a considerable amount of care and attention to detail; it must be a perfect fit else it will be useless. The first step is to take an impression in plaster of Paris; pure soft platinum only should be used, such as without the porcelain body would prove too pliable for ordinary work. After swaging the plate and finishing to the desired form, soft platinum wire of a conical shape should be soldered with pure gold round the edges. The plate should then

be roughed by a sharp sculptor, after the style of chasing or frosted work, so that the body may be retained on its surface when fired. The bite having been accurately secured, suitable teeth should be selected, ground, adapted in the usual manner. The piece should then be tried in the mouth and correctly articulated. This having been satisfactorily accomplished, insert the teeth in a casing of plaster of Paris, asbestos and silver sand. This should then be slowly dried and the retaining wax removed by a stream of boiling water. Strips of soft platinum should then be passed under the pins of the teeth, closing them securely over the strips. Pure gold only should be used for soldering; it should be cut into small portions and placed in situ, so that when exposed to the heat of the furnace it will secure the pins and strips to the plates. Allow the piece to cool gradually, let it be thoroughly washed and well dried; then, with a suitable spatula, apply the silicious body carefully, and with the judgment acquired only by practise; cleanliness also is indispensable. Usually, after the first firing, cracks and flaws will be met with. These must be carefully filled up with new material and the piece fired again. This must be repeated until an even smooth surface is obtained; the enamel should then be applied in the same manner as the body. Repeated firings, either for the first making or for repairs, do not injure the plate or teeth, provided proper care be taken to heat and cool the piece gradually. Before doing repairs it should be boiled, first in dilute sulphuric acid and then in a saturated solution of subcarbonate of soda, in order to remove all traces of the buccal secretions. Lastly, to give it a neater finish, the continuous gum set is electroded with fine gold, by means of gilding solution. The Cheoplastic process is, no doubt, best adapted for lower cases, and where great absorption of the alveoli has occurred, the gums presenting an almost flat surface, we sometimes find that, when relief is subsequently required on account of rounding of the outer edges, the necessary filing down can be done without in any way interfering with the original finish. In fact, when continuous gum work is adopted for lower pieces, a well defined prominent ridge of the gum is necessary, but in cases where additional weight may be of great advantage the Cheoplastic lower gives increased steadiness and deadness of fit. A detailed ex-

planation of this process is given in Dr. Harris's work on the "Principles and Practise of Dentistry." Besides the silicious body and gum enamel introduced by Dr. Allen, Mr. Crapper also uses some of his own composition, which fuses at a lower temperature than Dr. Allen's. He has recently been experimenting with a view of substituting a gas furnace for the ordinary coke fire, and with some success, though, as yet, his efforts in this direction have not led to perfectly successful results.

Mr. CLAUD ROGERS exhibited a saliva pump, invented by himself, on the syphon principle. It consisted of a straight metal tube, surrounded at some inches from the lower end by a diaphragm; to the upper end a curved glass tube was attached by elastic tubing; just above the diaphragm was a small opening into the tube. The mode of action was as follows: The lower end of the tube was inserted into the waste pipe of the operator's basin until this was plugged by the diaphragm; the basin was then filled with water, and the curved glass tube being placed in the patient's mouth, the current of water running down the tube through the small hole above the diaphragm created a partial vacuum in the part above, so that the saliva was drawn into it through the glass mouthpiece. The quantity of water used was not large; two gallons an hour would keep the mouth perfectly dry.

Mr. CHARLES TOMES described a modification of Mr. Rogers' apparatus, which he had had fitted up in his own operating room. The straight and metal tube passed down the leg of the operating chair, and through the floor, here it is joined by a horizontal tube coming from a cistern at some little distance, the aperture at the point of junction being very small; beyond this junction the vertical tube is carried through the wall, and opens externally. On turning a tap, water runs along the horizontal tube into the lower part of the vertical one, and creates a strong "draw" in the upper part of this tube. Three quarts of water an hour sufficed to keep the pump in full action.

Mr. COLEMAN said that his colleague, Mr. Ewbank, had lately been using Mr. Rogers' apparatus, and had been much pleased with it.

Mr. CHARLES TOMES then exhibited a specimen which had been sent to him for examination by Dr. Barrett, of Buffalo, U.S., and which was, so far as he knew, unique

It was a lobulated calcified tumour, of irregular shape, attached to the roots of a lower molar; these were partially surrounded by the tumour, and absorption of the apices had commenced. Microscopical examination showed that the tumour had invaded the fang, and did not spring from it. As to the nature of the growth, he had not yet been able to determine it with certainty, but he was inclined to think it a calcified enchondroma; it was quite unlike any other dental specimen which he had ever seen figured or described. He showed also an elephant's tusk, of which the growth had been curiously perverted; irregular masses of secondary dentine were seen springing from its axis.

Mr. MOORE, of Croydon, then related the following case: A lady brought to him, in June last, her son, aged 11. He had on one side of the mouth a hard, bony tumour, which, however, gave at one point the crepitant feel characteristic of a dentigerous cyst. Mr. Moore extracted a deciduous molar; the cyst was thus opened, and a glairy fluid escaped. After washing out the cavity with dilute carbolic acid, a bicuspid could be seen just appearing at the bottom of the cavity. The neighbouring permanent molar was carious, but Mr. Moore thought it best not to interfere with it at that time. The boy returned a month later, but no diminution had taken place in the size of the tumour. In August the state of things was the same; the bicuspid also had not grown. Mr. Moore then extracted the carious molar, and found its periosteum thickened and congested. In September the swelling had decreased; in October the diminution was considerable, and now (November) the tumour has almost disappeared. He thought it probable that the cyst was caused by irritation, set up by the carious molar.

Mr. HOWARTH exhibited a lathe, on which four wheels could be worked at once on different spindles.

Mr. PITTY exhibited an apparatus for giving gas or ether. By means of an ingeniously constructed tap, the patient could, at the will of the administrator, be made to inhale air, gas, gas and ether, and then ether and air.

The PRESIDENT then called upon Mr. S. J. Hutchinson to read his paper on the Radical Cure of Alveolar Abscess.

Mr. HUTCHINSON began by saying that considerable diversity of opinion existed as to the best mode of treating Alveolar Abscess, and that none of the plans proposed

could be considered satisfactory. In Taft's Operative Dentistry, the most recent work bearing on the subject, it was stated that "no aspiring dentists would be satisfied with the results as yet attained, though in the hands of a few, great progress had been made within a very recent period." In the course of the past session the cure of alveolar abscess had been alluded to on several occasions and creosote, arsenic, and carbolic and salicylic acids had been recommended by different speakers. Mr. Woodhouse, in May 1865, was the first to bring before the Society the value of carbolic acid as a dressing for exposed nerves, and to predict the popularity which it has since attained. In Feb. 1867, Mr. James Bate also read a paper on the carbolic acid treatment, and this agent has since come into general use.

The plan of treatment which he was about to describe was not original as regards the means employed, and even some of the details had been published by Dr. Farrar in the *Cosmos* for Nov. 1876, but he had introduced some modifications in the mode of applying the dressing which he thought would be found advantageous.

The plan was not applicable to all cases of Alveolar Abscess, they must be judiciously selected: the upper incisors and bicuspid and the lower temporary molars were the teeth which had been most successfully treated by himself.

Cases of Alveolar Abscess might be conveniently divided into two classes; (i.) where a fistulous opening or chronic gum boil is present; and (ii.) where this does not exist but there are only symptoms of periostitis and latent abscess.

With respect to the first class his experience has been favourable, and he would confine his remarks chiefly to it. Of the second class he could not say as much, and he hoped to learn something from the members present as to the best mode of treating those cases.

He then proceeded to describe the treatment of a typical case, taking as an example a central incisor of which the pulp had degenerated, with the formation of a small chronic abscess over the apex of the fang. Having removed all remains of the pulp as far as possible without going through the apex of the fang, a light dressing of aconite and chloroform should be applied at the root; this was a most useful dressing for relieving the pain of a tooth af-

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fected with periostitis after clearing out the pulp. On the next day but one, treatment might be resumed by putting on the rubber dam and then inserting some crystals of pure carbolic acid; no water or glycerine should be added, the heat of the mouth being quite sufficient to melt the crystals; these were best applied on a fragment of amadon. A piece of wool saturated with carbolic acid should then be wrapped round a flexible broach so as to form a sort of piston, the size of the pulp cavity, and by working this up and down, the acid will be driven well into the tooth and may possibly appear on the surface of the gum through the fistulous opening; where this had occurred, the result of the case had invariably been successful. When this has been done thoroughly the cavity may be syringed out with warm water and is ready for filling; but whilst preparing for this, it should be kept filled with carbolic acid on wool. A minute piece of cotton wool is then soaked in pure carbolic acid and, with a fine instrument, passed up to the apex of the fang; next an equally small piece of cotton saturated with a thin mixture of osteo, of the consistency of cream, is quickly inserted, the object being to seal up a cavity which shall be antiseptic: the remainder of the fang can now be filled with fluid osteo, and when this is hard, the cavity of decay may be filled with gutta-percha stopping, which is easily applied and easily removed if necessary. In the earlier stage of alveolar abscess, before the formation of a fistulous opening on the surface of the gum, Mr. Hutchinson uses a mixture of creosote and morphia, mixed with a strong paste. The heat of the mouth liquifies this; it quickly penetrates up the fangs, and produces a very soothing effect. By this treatment a tender tooth raised in its socket may, in the course of a few weeks, be made ready to stop. Mr. Hutchinson concluded by reading short notes of two or three successful cases.

After a few words from the President,

Mr. VANDERFANT said that his experience of arsenic had not been satisfactory. He had recently had a case in which he had stopped a tooth after devitalizing the pulp with arsenic. Pain soon returned, and, on removing the filling, he found that hæmorrhage in the pulp cavity had occurred. He then used Mr. Oakley Coles' pepsine; a week afterwards he found the pulp gone, and was able to re-stop the tooth successfully with Ash's composition.

Mr. COLEMAN said he had found arsenic useful in the less severe cases of periosteal mischief. He applied it under a temporary filling, and found that with this treatment the inflammation subsided. Arsenic was a powerful antiseptic, and he thought the effect on the tooth was due to its action in arresting decomposition rather than to its toxic action, for the quantity necessary was so very small. He had only tried transplantation in cases where no other treatment was possible, and 50 per cent. of the teeth were saved. Considering that all were doomed except for the success of this operation, he thought this result was good.

Dr. FIELD said he was glad to hear that Mr. Hutchinson had been successful in his treatment of the deciduous teeth; he thought that enough attention was not generally given to their preservation, and that children suffered seriously in consequence; their constitution was often permanently damaged by imperfect digestion of food consequent on inability to masticate properly. He had seen several cases of transplantation in the practice of M. Byng, of Paris, but had not seen one which could really be called successful. For the treatment of alveolar abscess he had used Coxeter's aspirator; he lanced deeply, and then used the aspirator. He thought that, with early treatment and perseverance, nine-tenths of these cases could be cured, though the treatment might sometimes extend over twelve months: Strumous subjects are the most unfavourable.

Mr. STOCKEN was also of opinion that much depended on the constitution of the patient.

Mr. CHAS. TOMES remarked that alveolar abscess was not merely a result of inflammation of the soft parts; careful examination would nearly always show the presence of small exostoses on the fangs, and it was not yet known how far these were an obstacle to success in treatment.

Mr. MOORE (of Plymouth) confirmed Mr. Chas. Tomes' statement that exostosis on the fangs could be found in nearly every case of alveolar abscess. His treatment was to puncture a hole into the alveolus near the apex of the tooth.

After a brief reply from Mr. HUTCHINSON, the VICE-PRESIDENT announced that on the next occasion a paper would be read by Mr. Ashley Barrett on "The Symmetrical Extraction of Teeth," and the meeting terminated.

Memorial to the College of Surgeons of England.

THE following are copies of a circular and a Memorial recently sent to the Licentiates in Dental Surgery :—

SIR,—The Memorial of the Licentiates in Dental Surgery, sent in to the Council of the College of Surgeons in April last, resulted in the appointment by that body of a Committee, whose decision is thus announced in the Annual Address delivered by the President in June last :—

“A Committee appointed by the Council to consider certain questions relating to the Diploma in Dental Surgery, brought under the notice of the Council by a Memorial from the Association of Surgeons practising Dental Surgery, and by a counter Memorial from a great number of the Licentiates in Dental Surgery of the College,* have arrived unanimously at the conclusion, and have recommended accordingly, that the Dental Licence should in itself be deemed a sufficient qualification to enable the holder to undertake the appointment of Lecturer on Dental Anatomy, Dental Physiology, or Dental Surgery, or of the post of Surgeon to a special Dental Hospital, or the Dental department of a recognised Hospital; and, looking to the special arrangements necessary for such appointments, the Committee were of opinion that it is expedient that Certificates should not in future be received from Teachers, unless, in addition to any other qualification they may possess, they also hold the Licence in Dental Surgery of the College.

“The Committee further unanimously recommended, with a view to giving greater importance to the Dental Licence, and thereby meeting the objections of the Association, that the Dental Board should gradually increase the severity of the test by which the said Licence is obtained.”

The undersigned, in view of the great probability that the Council of the College will discuss the question at their next Meeting, have drawn up the accompanying Memorial; if you approve of it, be good enough to sign the paper on the fly-leaf, empowering Mr. Underwood to append your name to the document. Your letter, so authorising your name to be appended, will be sent into the Council. Do not, therefore, detach the authority from the printed copy of the Memorial. Please to insert your qualifications, and

* *Vide* Vol. V., p. 529.

also any professional appointments you hold, or may have held.

The time being limited, an answer by return of post is earnestly requested.

W. H. Forsyth, Charles James Fox, Robert Hepburn, Alfred Hill, G. A. Ibbetson, John R. Mummery, James Parkinson, Henry Sewill, Charles S. Tomes, John Tomes, J. Smith Turner, Thomas Underwood, T. F. Ken Underwood, Charles Vasey, A. J. Woodhouse, Robert H. Woodhouse.

October, 1877.

THE MEMORIAL.

TO THE PRESIDENT AND COUNCIL OF THE ROYAL COLLEGE
OF SURGEONS OF ENGLAND.

GENTLEMEN,—As practitioners we are deeply interested in all that concerns our profession, and we desire to express, individually and collectively, our gratitude to you for the interest the College has ever taken in promoting the study and practice of Dental Surgery.

We more especially thank you for the appointment of an able Committee charged with the duty of inquiring what further steps can be taken to secure, both in the teacher and student of dental surgery, the highest degree of practical efficiency, and we sincerely hope that the consequent recommendations published in the President's Report will be carried into effect. While the question of professional education is under discussion, we will venture to make the following relevant suggestions, and to solicit their consideration.

The curriculum required of the qualified surgeon who desires to take the licentiate'ship in dental surgery is now extended over three years. Seeing that he can devote his undivided attention to the study and practice of the special dental subjects, we beg to suggest that the time might, without detriment to proficiency, be shortened to two years, or to an uninterrupted daily attendance of eighteen months.

And we ask, in behalf of Dental students who may ultimately desire to take the membership, that the lectures and hospital practice attended at a recognised hospital and medical school by pupils who have passed the examination in arts, shall, if attended in the prescribed order, be regis-

tered as parts of the curriculum both of the M.R.C.S. and L.D.S.

Daily, and even hourly, those engaged in dental practice feel, that without highly-cultivated technical skill, professional knowledge, however accurate, can not be effectively applied in the treatment of cases. We therefore venture to suggest that, if the examination for the licentiateship were in part practical, a higher average of practical skill would be reached, both by the teachers and the taught, than that which a strictly verbal examination is likely to secure.

By pre-arrangement, a dozen patients with the needful operative appliances could any morning be provided at the Dental Hospital, and the skill to which the respective candidates have attained witnessed by the Dental Section of the Board of Examination in Dental Surgery.

Reviews of Books.

Practical Observations on the Degeneracy and Preservation of the Teeth.
By EDWIN COX, L.D.S.R.C.S., London, Elliot Stock.

THE object of the writer of this little book is "to convey to non-professional readers some practical suggestions upon a subject around which various erroneous conceptions still linger, and to commend a conservative and not a destructive dentistry." To write upon the subject which Mr. Cox has chosen, and with his avowed object, necessarily requires the exclusion of technicalities; and to enliven a subject which, to a general reader, is at best "dry," needs considerable tact on the part of the writer. These necessities to the success of such a book Mr. Cox has estimated and fairly accomplished.

"Is the alleged degeneracy of the teeth true? Is it a fact?" is a question which is discussed in eleven pages, and from that discussion we gather the following conclusion:—

"From the testimony of our fathers and the examination of ancient skulls, we may reasonably infer that this transient life of the first molar was formerly as much the exception as it is now the rule. As to the grinders of adults, it is probable they are now generally lost before the age of thirty, and, among certain classes of English society, at a much earlier age. . . . But whatever opinion may be formed as to the dental degeneracy of the English people and the human race in general,

that of England's urban and manufacturing population scarcely admits of a doubt. . . This degenerate state of the teeth in the case of the factory workers is only one evidence and result of general physical deterioration; in other classes, special causes, distinct and various, lead to the same evil result."

Mr. Cox is evidently not a flesh eater, at all events he advocates vegetarian principles. To carry out his ideas we find instances of logical obliquity, for instance: "That large deposits of tartar are only possible when an alkaline reaction exists, I am led to doubt, from the fact that the teeth of a person in perfect health are practically free from tartar." "That this acid state of the fluids of the system is mainly caused by dietic errors, especially by flesh-eating, is suggested by the fact that healthy vegetarians shew no tartar, except a little in old age."

From the foregoing, suppose we state as propositions that—

Persons in perfect health are free from tartar.

Healthy vegetarians show no tartar.

Therefore, tartar is mainly caused by dietic errors, especially flesh eating. The third proposition is at fault. Or if the last sentence we quote be considered complete in itself, we fail to establish a syllogism upon it. Altogether, we fail to see Mr. Cox's reasoning.

Many of the statements of Mr. Cox are open to strong objection, such as, the dentinal tubes convey nutrition, the teeth were designed, &c. Notwithstanding our criticism, we compliment Mr. Cox for the manner in which he has treated his subject. The book is quite free from that most objectionable quackery and egotism with which such works for non-professional readers are painfully burdened, and it is indeed well titled "Practical Observations."

Correspondence.

We do not hold ourselves responsible for the views expressed by our Correspondents

TO THE EDITOR OF "THE MONTHLY REVIEW OF DENTAL SURGERY."
THE DENTAL HOSPITAL OF LONDON.

LEICESTER SQUARE W.

DEAR SIR,

3rd November, 1877.

I see in your last issue a notice that no "Introduc-

tory Address," was given at this Hospital, I beg to correct the mistake, and enclose you a copy of my Address delivered on October 2nd.

Yours faithfully,
J. FRANCIS KER UNDERWOOD,
Dean.

[Our statement that "the London School of Dental Surgery was not on this occasion the theatre of a formal inaugural address," was made upon the facts that we received no intimation of the Address; neither the secretary to the hospital, nor one of the staff, nor a second year's student knew of any "Introductory." We regret our statement was not wholly true.—Ed. M.R.D.S.]

DEATH FROM THE ADMINISTRATION OF ETHER.—A death from the administration of ether is reported from Lincoln. Miss Annie Elizabeth Steele, daughter of the late Captain Steele, 10th Lancers, was about to undergo an operation for cancer in the breast. Half an ounce of ether was applied in an inhaler, and after drawing three or four inspirations the unfortunate lady expired, notwithstanding that every effort was made by the three medical men present to restore consciousness. A *post mortem* showed that death resulted from failure of the heart's action, and the diseased condition of the lungs.

LONDON DENTAL HOSPITAL.

CASES TREATED FROM OCT. 1ST TO OCT. 31ST, 1877.

Extractions.	Children under 14	...	...	...	569
	Adults	...	...	...	814
Under Nitrous Oxide	...	...	...	...	304
Gold Stoppings	...	...	...	...	272
White Foil ditto	...	...	...	...	121
Plastic ditto	...	...	...	...	427
Irregularities of the Teeth treated mechanically	...	...	...	...	73
Miscellaneous Cases	...	...	...	...	257
Advice Cases	...	...	...	...	83

Total ... 2920
LAWRENCE READ, *Dental House Surgeon.*

TWO SHILLINGS per Copy will be given for the August (1872) Number of the *Monthly Review of Dental Surgery*, if sent to Mr. George Butcher, 4, Crane Court, Fleet Street, E.C.—ADVT.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of Messrs. SMITH, ELDER, & Co., 15, Waterloo Place, Pall Mall. All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4, Crane Court, Fleet Street, E.C.

THE MONTHLY REVIEW OF DENTAL SURGERY.

No. VII.

DECEMBER, 1877.

Vol. VI.

EDITORIAL ANNOUNCEMENT.

In order to increase the already extensive circulation of the "Monthly Review of Dental Surgery," the proprietors have determined to reduce the rate of Subscription to 7s. per annum, post free, or 6d. per single copy.

The "Review" was born in the month of June, 1872, and each succeeding volume has begun with the June issue. Henceforth, each volume will begin with the January number, and end with the following December number. So, on January the 15th, 1878, will be Published No. 1 of the Seventh Volume.

The PRESTIGE of the "Monthly Review of Dental Surgery" will be studiously maintained. Original communications, selections, and topics of interest to the Dental Profession, together with leading articles on professio-social and scientific subjects, will be matters of editorial economy.

Communications are already promised by Dr. Arkovy, W. J. Barkas, L.R.C.P., M.R.C.S. (illustrated), Ashley Barrett, M.B., Lond., M.R.C.S., &c., Oakley Coles, L.D.S., R.C.S. (illustrated), S. J. Hutchinson, M.R.C.S., L.D.S., Harry Rose, L.D.S., R.C.S., C. E. A. Semple, B.A., M.B., Cantab., &c., Parsons Shaw, Chas. S. Tomes, M.A., M.R.C.S., and others.

The Editor solicits as contributions, original investigations, reports of cases of interest, expressions of opinion on current events, and he invites free discussion on all professional matters.

The Odontological Society.

IF the Odontological Society of Great Britain be looked upon as the representative body of the Dental Profession, it were interesting to inquire how a proposed new bye-law would be received by the profession as a body, and would react upon the Society.

At the annual general meeting, to be held on the 14th proximo, the Council will submit to the approval of the Society the following new bye-law, viz. :—

“That after January 1st, 1880, no person be admitted a candidate for the Ordinary Membership of the Odontological Society unless he possess the Dental diploma of the Royal College of Surgeons, or such other qualification in Dental Surgery, Medicine, or Surgery as the Council may deem sufficient.”

This is a very important bye-law, and one which, we believe, the Council of the Society has carefully deliberated.

It might be asked by the as yet unqualified and great element of our profession if such a bye-law were not antagonistic to an object of the Society, which was “instituted for the encouragement and diffusion of knowledge in Dental Surgery, and *for the promotion of intercourse among members of the Dental profession.*” To this we reply, with regret, that, from “the nature of the case,” the majority of our profession are not admissible to the membership of the Society. Those who are admissible, and have not yet taken advantage of its benefits, have but themselves to blame. If the law be passed they will still have two years during which to seek election. It is also probable that before those two years expire there will be instituted a Dental Diploma in connection with the Colleges of Surgeons of Scotland and Ireland. And it is hoped that

the regulations for admission to the respective examinations, as they apply to non-curriculum candidates, will be such as shall embrace men who commenced their professional career on or before a certain date—a date sufficiently far back as will by this time have afforded them opportunity of gaining by experience and self-culture such knowledge as will be required by the standard of examination, which ought to be equal to that of the English College. So would they who have neglected their own interests, so far as the Odontological Society concerns them, have opportunities of qualifying themselves, not only for its membership, but also for higher offices. Were some such conditions of admission to examination existing, and were a man to fail either in energy to acquire the necessary knowledge, or in ability to pass the required standard, we should have our misgivings whether such an one would be calculated to further the first half of the objects of the Society, as quoted above. We admit that such is but one of the objects. The conditions of eligibility, as they now exist, are not other than behoves every member of a respectable Society and a Profession. With these considerations—two more years of grace, and, probably, by the end of that time, opportunities of being admitted on “reasonable terms” to examinations for a Dental Diploma—the respectability of every man being in his own hands, and the want of that fitness has been the great barrier; we say under these circumstances, the proposed new bye-law can not have any untoward effect upon the majority of the profession, but which will be specially their own. Therefore they cannot conscientiously say that, so far as they are concerned, “the promotion of intercourse among members of the Dental Profession” will be thereby blasted.

John Stuart Mill has written :—“ Even in the best state

which society has yet reached, it is lamentable to think how great a proportion of all the efforts and talents in the world are employed in merely neutralizing one another." Let us connect with this preamble the following quotation from a leading article in the *Lancet* (June 3rd, 1876):—"Ample justification for the formation of the new Society (Association of Surgeons Practising Dental Surgery) is found in the laxity of the rules regulating the admission into the Odontological Society, which cannot by its constitution be held faithfully to represent what is most advanced or most creditable in the specialty." Suppose we omit from our present consideration the spirit breathed forth in the quotation from Mill as in any way influencing the founders of the Association, the implication contained in our extract from the *Lancet* is sufficiently perilous to the dignity of the Odontological Society to warrant the Council in taking some steps in the matter. It has been said that the L.D.S. degree is the child of the Odontological Society, and yet for nearly twenty years its pet acquisition has not been required of its members. We unhesitatingly assert that had the Dental Licence or other degree been an essential qualification for membership, even ten years ago, the objects of the Society could not have been carried out.

To our mind, then, this proposed new Bye-law is highly politic. At no former time would the proposal have been congruous with the social state. As we must inevitably admit that the professional social state has markedly advanced during the past twenty years, that dentistry has socially and scientifically evolved, so must we strive to bring our institutions into equilibrium. During that transition we must be prepared for a conflict between ideas and institutions of a past social state, and ideas and institutions of a new social state.

The result of this political action upon the future of the Odontological Society we need scarcely predict. The members infused into the Society will necessarily have attained to a certain relative degree of dental culture: Not but that many unqualified men are superior to many who are qualified. Yet, taken generally, the units of the Society, having had a systematic and varied training, must, as a correlative, improve the nature of the society whose units had no such training. Remembering that results not anticipated from a law frequently exceed in amount the results anticipated, it were a phenomenon too complex for us to attempt to trace the future reaction of the new Bye-law upon a contemporary and younger institution, already alluded to.

In conclusion, we commend this proposed new Bye-law to the careful consideration of the members of the Odontological Society. The adoption of this policy will strike at the root of the Constitution of the Society, and profoundly modify its general tone. It is a step in the right direction. It is an advance from a lower form ceasing to be fit, to a higher and fitter form.

The Month.

THE "LANCET" ON THE COLLEGE OF SURGEONS.

THE decision of the Council of the Royal College of Surgeons to adopt the report of the Committee on the Dental Diploma revives the whole question of that special qualification. It will be convenient to mark the event by restating the view we have taken, and still continue to hold, on the not unimportant subject of these special diplomas in its broad aspects. As regards the qualification of "surgeon-dentists," we have contended that they should be surgeons—that is, members or licentiates of a College of Surgeons or graduates in surgery of a University—first and dentists afterwards, just as licentiates in midwifery ought to be first surgeons, and then specially diplomated. To the application of this sound principle it has been objected that dentistry, as practised in

this day of specialties, does not occupy a position identical with that of the obstetrician properly so called; in short, that midwifery is an integral part of general practice, whereas dentistry is something outside the province of the ordinary medical attendant, who qualifies and describes himself as a "surgeon." We say that only in so far as dentistry is a part of surgery has the College of Surgeons anything to do with the matter. It is impossible to suppose that the practice of mechanical dentistry—for example, the manufacture and fitting of false teeth—can ever form the subject of examination at the College. That business, however useful is obviously an art which falls into the category of industries with which the profession has no more immediate concern than with the skilled work of the surgical instrument maker, or the artist in false limbs, noses, or hair. These departments of dexterity are most useful and necessary in their way, but they were deserted by the College of Surgeons at the moment of its evolution from the state and mystery of a company of barber-surgeons. The notion, therefore, of mechanical dentistry being placed under the patronage of the corporate body in Lincoln's Inn may, we assume, be dismissed. It is, however, the only ground upon which it would be reasonable to accept the proposal to grant a substitutionary instead of a supplementary diploma to "surgeon-dentists" who are not surgeons.

In so far as dentistry relates to teeth management, and such operative interference as may be necessary to health, it is clearly an essential part of the practice which falls to the lot of the "surgeon" commonly so called—that is, the member or licentiate of a College, who, without making a specialty of surgical disease, treats the ordinary class of bodily ailments. In a word, except in large cities, where the pressure of work compels a complex subdivision of labour, the general practitioner is a dentist, although he does not so describe himself. The principle laid down of course applies with equal force to the licence in midwifery. The conditions are identical with those which affect the ordinary practice of obstetrics: the general surgeon is also an accoucheur. In many districts of the country it is the custom to emphasize the fact by assuming the descriptive designation "surgeon-accoucheur." The licence in midwifery was originated with the double purpose of supplementing the very meagre qualification given by the diploma of Membership at a time when nothing beyond anatomy, physiology, and surgery was included in the College examination, and of giving a much-needed incentive to the study of obstetrics. The first intent should have governed the

practice. The like is true of the licence in dentistry, with the difference that the dental diploma was instituted with a view to incorporate under theegis of the College of Surgeons, a class of professional men who were already engaged in work assumed to form part of surgery. It could only be, as we have contended, upon the basis of such an assumption the College of Surgeons conceived it lay within the scope of its duty to interfere. Starting from this intelligible standpoint, we felt, and still feel, that the Dental diploma, and that in Midwifery, should be granted after a *supplementary* examination, to be passed by men who already hold the diploma of Member, or some equivalent surgical qualification. The opening of a byway to these special licences involves a sacrifice of principle as regards the unity of surgery. It is always competent for the College of Surgeons to adopt special measures for the encouragement of particular departments of surgery, but we fail to perceive the ground upon which that body assumes the right of granting licences for subsidiary branches of surgery to persons who are not surgeons. If the step now taken by the college is to be regarded as a precedent, we may have licentiates in ophthalmology, in ear, throat, mouth, and foot disease—in short, any fragment broken off from the mass of surgical work to suit the whim or convenience of enterprising specialists. This would be a great calamity, and we ask the Council of the College to reconsider the whole question, and the principle involved, before carrying out the conclusion reached at the meeting on the 8th. The position is neither logical nor expedient. It is, we repeat, an irregular procedure which the Council contemplates; there is no sort of reason or excuse for creating a series of special qualifications below the rank of surgeon. Moreover, the effect of the course taken must be disastrous to the prestige of the profession, and injurious to the public. It is a retrograde step, tending to the debasement in place of the elevation of medicine as an intellectual profession.

The only practical argument we have heard advanced in support of the course proposed is a contention that dentistry has grown to be so important and independent a branch of practice that it may be fairly studied apart. Those who propound this reasoning go further, and urge that it is unreasonable to ask men who intend practising as "dentists" to pass through the full curriculum required for membership, and subsequently take up the study of dentistry. We reply in so far as dentistry is a part of surgery, it is no more independent or special than midwifery, and as the student proposing to take the licence in obstetrics studies the spe-

cial subject as an integral part of his surgical work, so the man who intends to practise as a dentist may obtain his knowledge of the teeth. To come at once to the root of the matter, it is the art of making and fitting false teeth—with the multitude of matters which combine to make the craft of the modern dentist—that renders the task of studying dentistry as a branch of surgery embarrassing! We again protest a College of Surgeons has nothing whatever to do with this craft, which has come to form an important element of the surgeon-dentist's business. The English College will depart from its plain line of duty if it is induced to throw the professional sanction of a diploma over the composite craft of the surgeon learned in regard to the teeth, and the fabricator of apparatus to supply the place of the natural organs. As well might it authorise the combination of surgery with surgical-instrument making. It is possibly true that the hospital schools do not lay sufficient stress on the importance of instructing pupils in the surgery of the teeth. We are prepared to admit the possibility of neglect at this point; but the defect is not to be remedied by creating a specialty to which men may be inducted without first passing the portals of the College—becoming surgeons first, and specialists afterwards. The decision arrived at is bad in fact and prudence, and should certainly be reconsidered.—*Nov. 17th.*

(*Vide* our remarks of last month.—Ed. M. R. D. S.)

SPONGE AMALGAM.

We have received from Messrs. Ash & Sons a sample of Dr. Slayton's Sponge Amalgam. At the last meeting of the Odontological Society Mr. Munmery exhibited some of this new-filling material. The remarks then made are given in our report of the meeting, to be found at another page. Beyond what is there stated, we have only to say that if experience proves that this Sponge Amalgam possesses all the virtues claimed for it, we shall have to thank Dr. Slayton for his valuable contribution to our metallic fillings.

DEATH FROM CHLOROFORM.

On the 6th instant an inquest was held, at Huddersfield, on the body of Mrs. Sykes, who had died from chloroform. About a fortnight previously Mrs. Sykes employed her brother-in-law, Mr. Frederick Oldfield, of Fartown, to extract some teeth, and, as she wished chloroform to be administered, Mr. M'Caskie, surgeon, New North Road, was employed to administer it. The operation was successful, and Mrs. Sykes felt no ill effects from it. On Tuesday last she underwent another operation, and when one of the teeth was being extracted she said, "Oh, dear, what shall I do?" and almost directly afterwards died. She had about half the quantity of chloroform administered that was given to her on the previous occasion, but it did not appear to have taken proper effect. The Jury returned the following verdict: "That the deceased died suddenly whilst under the administration of chloroform, the cause of death being probably paralysis of the heart, and we find that the chloroform was carefully and properly administered."

A DENTIST INDICTED FOR MANSLAUGHTER.

Mr. Warren E. Westlake, dentist, Elizabeth, New Jersey, was recently indicted for manslaughter in consequence of the death of a patient to whom he had administered chloroform to extract a tooth. When the trial came on he was acquitted.

Dental Anatomy and Physiology.

THE FIRST OF A SYSTEMATIC COURSE OF LECTURES.

Delivered on October 8th., 1877.

By THOMAS GADDES, L.D.S., R.C.S.

LECTURER ON DENTAL ANATOMY AND PHYSIOLOGY, AND ON THE
ELEMENTS OF HISTOLOGY, AT THE NATIONAL DENTAL COLLEGE; ASSISTANT
DENTAL SURGEON TO THE NATIONAL DENTAL HOSPITAL.

MR. DEAN AND GENTLEMEN,—According to the syllabus which I have prepared of this course of lectures, our subject is titled *The Synthetic Study of Odontology*. Let me at the outset explain what is meant by synthetic study. Synthesis is the putting together of the elements of thought into a whole; and in this respect it is the opposite of analysis, which is the resolving a whole into its elements. The examination of the elements of a subject; the arranging and bringing together of those various elements; would constitute the synthetic study of that subject.

Now, it is shown by one of the most able scientists of the present day that "science is that which treats of the forms in which phenomena are known to us, and of the phenomena themselves, in their elements and in their totalities." Moreover, to treat any subject to the best scientific advantage is to consider it in its elements, and then in the aggregation of those elements. I shall not enlarge upon the advantages thus to be gained, for on a little thought some of the benefits will be evident to most of you.

I have thought it well, in considering with you the subject of Dental Anatomy and Physiology, to study it synthetically; an arrangement of the subject you will not find in books, though you may find therein most of the facts I shall have to dwell upon. Therefore, I ask you to take full and perfect notes of what I say, and afterwards to work those out with the aid of books.

The subject demands your closest attention. Among the *special* subjects of the Dental Curriculum, this is the most difficult, while, at the same time, it is the basis of all your special dental education. In delivering the lectures it will be my constant aim not only to make them as attractive as I can, but also to make each subject as plain as possible by sketches and demonstrations.

Those of you who attended my summer course of lectures on Histology will be somewhat familiar with many

expressions, and also with the forms of development as seen to occur in some of the tissues; therefore, I shall here only allude to them.

The animals lowest in the scale of organisation (class *Gregarinida*, sub-kingdom *Radiata*) are devoid of mouths and of digestive apparatus. They live entirely by imbibition.

In the next class (*Rhizopoda*) are animals which possess the power of throwing out processes of their substance, as white blood corpuscles do, exhibiting a distinct amoeboid movement. These processes are called "pseudopodia." By means of these becoming attached to, and encircling, nutritive particles, and thus drawing them into its substance, does the animal perform the function of ingestion or feeding. There is neither mouth nor anus: indeed there is nothing to be discovered by the microscope worthy of the name of organisation. In the substance of many of these creatures nothing is to be discerned but a mass of jelly-like texture, resembling a particle of thin glue.

Ascending the scale we find animals (class *Hydrozoa*) exhibiting a definite histological structure of their tissues, possessing a mouth and digestive cavity. This digestive sac, according to Prof. Huxley, is not in any way included in the substance of the rest of the body, but stands out independently, so that the outer wall is in direct contact with the water in which the animal lives. A Hydrozoon is essentially an open-mouthed saccule, consisting of two membranes—an ectoderm and an endoderm. The majority of these animals seize their prey by means of tentacula, which are processes of these membranes, developed either around the mouth, or from the walls of the digestive cavity.

In another group of animals of greater complexity than the former (class *Polyzoa*)—sea-mats, &c.—the mouth is surrounded by a circle of tentacles, and every tentacle is fringed with long and active vibratile cilia, lashing water towards the mouth. The mouth leads into a long and wide pharyngeal and cesophageal tube, which opens below into a definite stomach. From this is continued a distinct intestine, which bends upon itself towards the oral end of the body, and then terminates upon the outer surface near the mouth. In this group we have for the first time in the

survey of the animal kingdom, an animal possessing a complete intestine.

In certain of the class *Crustacea* (sub-kingdom *Articulata*)—notably the crab and lobster—some of the limbs are modified so as to form maxillæ and maxillæpeda, the animal, so to speak, masticating with it's legs. These are parts of the exoskeleton. In the lobster one pair of maxillæ are finely dentated, giving the appearance of teeth; the other maxillæ have large tubercles upon them, but analogous to the fine dentations of the other pair of jaws.

Ascending to the sub-kingdom *Molusca*, in the class *Branchiogasteropoda*—which contains the whelks, periwinkles, sea-slugs,—and also in the *Pleurogasteropoda*—snails, slugs, &c.—the cavity of the mouth is invariably provided with an organ denominated the odontophore. It consists essentially of a cartilaginous cushion, supporting, as on a pulley, an elastic strap, which bears a long series of transversely disposed teeth. The ends of the strap are connected with muscles attached to the upper and lower surface of the posterior extremity of the cartilaginous cushion; and these muscles, by their alternate contractions, cause the toothed strap to work backwards and forwards over the pulley formed by its anterior end. The toothed strap consequently acts like a chain saw upon any substance to which it is applied, and the resulting wear and tear of its anterior teeth is made good by the incessant development of new teeth in the secreting sac, in which the posterior extremity of the odontophore is lodged.

In certain other molusca there is a differentiation of the mucous membrane of part of the alimentary canal to the extent of producing from this membrane bony plates and even teeth, as in the odontophore of whelks, snails, slugs, &c.

Now, if we pass from the primary division Invertebrata, of which I have given examples, to the Vertebrata, we shall therein find the differentiation of tissues for dental purposes of much higher types of complexity as regards form, structure, and distribution.

When an invertebrate animal possesses organs of mastication, these are either productions of the alimentary mucous membrane, or are modified limbs. In no vertebrate animal, on the other hand, are limbs so modified and functionally applied, the jaws being always parts of the

cephalic parietes, specially metamorphosed, and totally distinct in their nature from the limbs.

If we consider the teeth of the lowest class of vertebrata—fishes—we shall find, not only as regards substance, but as to their number, form, structure, situation, and mode of attachment, that they present more various and striking modifications than do the teeth of any other class of animals.

Commencing with the lowest genera, I shall first allude to those included in the order *Marsipobranchii*, such as the lampreys, and hag-fish. These animals have no mandible or lower jaw (Huxley), and are destitute of true calcified or dentinal teeth, the armature of the mouth consisting of horny cones or serrated plates. The labial opening of the mouth of the lamprey is like the concavity of a cone, and is covered with converging rows of teeth. The palatal cartilage carries a tooth which is generally bicuspid, and this is opposed by a semi-lunar horny plate, with which the cartilage, representing the lower jaw (Owen), is sheathed. There are also lingual horny plates. In the hag-fish, which is of parasitic habits—living upon the bodies of other fish—there is a single tooth in the median line of the palate, and a double serrated horny plate on each side of the upper surface of the tongue.

Passing to the higher order of fish (*Elasmobranchii*), the notochord, or embryonic structure which represents the vertebral column, is not persistent or undivided as in the two lowest orders (*Pharyngobranchii* and *Marsipobranchii*), but is generally separated into vertebræ more or less distinct. The vertebræ and other bones are “cartilaginous” in the interior, having an osseous crust only. There is a lower jaw. Here we have the sharks and rays as examples. In the still more highly differentiated or osseous fishes, there are more or less complete bony vertebræ; and in the different species of the class there are great varieties and modifications of dental structures.

In birds we observe the mouth adapted in the best possible manner imaginable for rapidly picking up small grains of food. To avoid their enemies they must necessarily take up that food so quickly that time for mastication is not permitted. As a result of the quantity habitually taken there has been produced a dilatation of the upper part

of the alimentary canal, this dilated portion being called the "crop." Thus, the food being rough and unmasticated, the mucous membrane and the muscular walls of the alimentary canal are thereby subjected to different influences or forces than they would be if such food were less hard, or more masticated. These forces—viz., the action of rough and unmasticated food—necessarily lead to such a differentiation of the mucous membrane, and of the muscular walls as fit that part for triturating the food, producing upon the mucous coat a ridged and tuberculated layer of horny matter, and an excessive development of the muscular tunic. These conditions we find in the gizzards of birds. And it is observed that the gizzard of a granivorous bird is more highly differentiated in those directions than is the gizzard of a carnivorous or flesh-eating bird. Thus in birds, having no masticating apparatus, the internal functions are specialized, and the crop serves as a reservoir and macerating sac, while the gizzard serves as a chamber to triturate. Hunter habituated a sea-gull to feed upon grain, and found that the lining of its gizzard became hardened, while the gizzard muscles doubled in thickness.

All known extant birds are devoid of teeth; but a few fossil specimens prove that there have existed birds with these organs. Some of these have true teeth, with curved crowns and thick roots, which are lodged in a groove. Another specimen (*Ichthyornis dispar*) possesses true teeth— $\frac{1}{2}$ —lodged in distinct sockets. But, apart from fossils, Geoffrey St. Hilaire discovered in a foetus of a paroquet nearly ready for hatching that the margins of the bill were beset with white and round tubercles, and under each tubercle there was a gelatinous pulp, supplied with vessels and nerves like that of a tooth. These are very important facts, inasmuch as they serve to link birds with reptiles, thus showing their true place in the animal kingdom, and supplying such data as the study of evolution teaches us to expect.

In reptiles and mammals we also find great variety in the teeth. In some instances the structure is comparatively simple, while in others it is very complex. We shall see, by-and-by, what forces or agencies are to be considered as causes in producing these modifications; but what I desire you now to observe from the foregoing is that in the

vertebrata all teeth are alike developed from a part of the mucous membrane of the alimentary canal. Whether the structure of the dental tissue be comparatively simple or complex; whether it resemble the ordinary structure of the bone of the animal, or of a lamination of hardened scales; or whether it be of a distinct and special structure, as true dentine or enamel; the tooth tissue is homologous with the mucous membrane. By homology is meant that relation between parts which results from their development from corresponding embryonic parts—almost a similarity of origin. This relation of the teeth to the mucous membrane is termed general homology, and the relation of one tooth to another (as a canine to a pre-molar) is serial homology. To illustrate the terms in another way:—Flowers of plants are modified leaves, they are both developed from the same embryonic structures, and therefore the one is the general homologue of the other. And again, the different parts of a flower—as the petals, the stamens, the pistil—are instances of serial homology.

Let me here explain to you another term you will frequently meet with—morphology. Morphology is the law of form or structure, and is said to be the very soul of natural history.

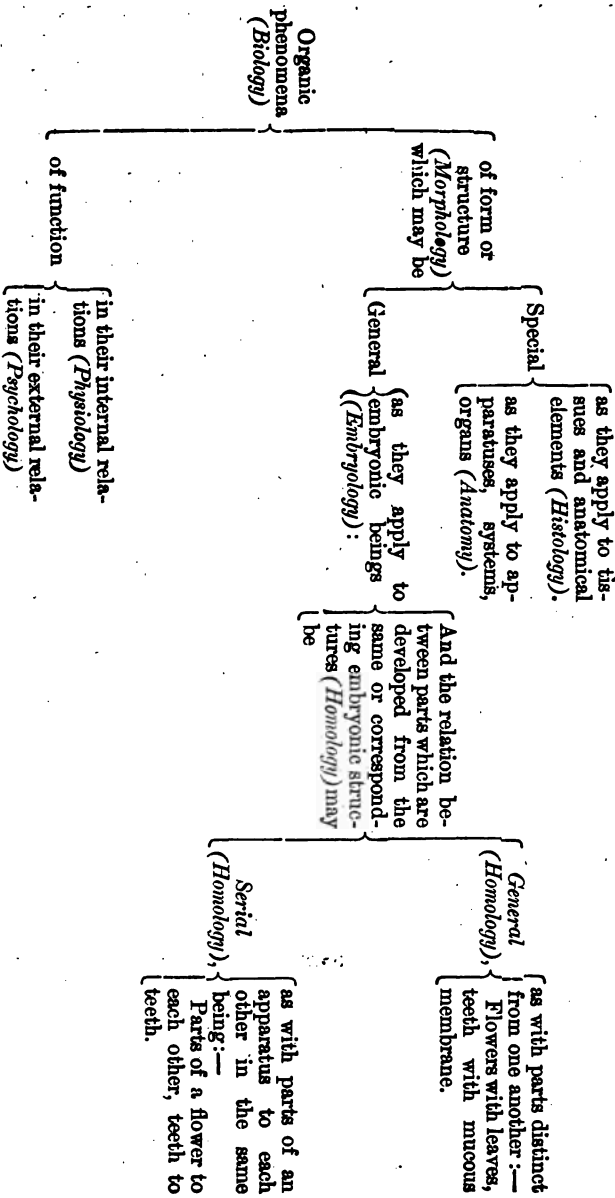
I here represent in a tabular form, as well as I have been able to think out, the relations between these several branches of concrete science springing out of biology. The table also gives a definition of each science, though necessarily of an abstract form.

(Table.)

Teeth, then, are modified or differentiated mucous membrane, a consequence of a further integration of matter by that tissue. They are the general homologues of mucous membrane—a result of morphological and physiological development.

Such would be an explanation of the genesis of teeth according to the principles of evolution. For an explanation of the genesis of teeth, of the multiplicity in number, form, and structure of teeth; as well as for the genesis of organisms, the multiplicity of parts, and the complexity of those parts in organic aggregates—in short, for an explanation of the differences between organisms—there are two

TABLE SHOWING THE RELATIONS, AND GIVING A DEFINITION OF SEVERAL BRANCHES OF BIOLOGY.



main hypotheses. First, that the different and various forms were created by a direct and special interposition of the Creator; secondly, that such organic phenomena were produced by the agency of the environment, that is, by physical forces, working upon susceptible matter during time, of which we have no conception.

The first theory has, by Professor Huxley, been termed the Miltonic; the second is that of Evolution. To the first theory advanced science and advanced thought raise questions, and bring forth facts which the theory, in its integrity, cannot answer. Those questions and other phenomena receive an answer and an explanation by the hypotheses of the theory of evolution. Consonant with the theory of evolution, the conception of "the constancy of the order of nature has become the dominant idea of modern thought. . . . Though we are clear about the constancy of the order of nature at the present time, and in the present state of things, it by no means necessarily follows that we are justified in expanding this generalisation into the infinite past, and denying absolutely that there may have been a time when nature did not follow a fixed order, when the relations of cause and effect were not definite, and when extra-natural agencies interfered with the general course of nature." Here, I pray you, mark a refutation of a popular delusion. As I interpret evolution in its deepest and most comprehensive significance, it does not ignore a Creator; yea it presents at bottom, and on many sides, a fundamental, an incomprehensible, an unknowable, a great mystery—God.

Now, to make clearer to you, and to investigate the causes of the mucous membrane becoming so differentiated, let me point out some of the factors in the process of evolution—or integration of matter and disintegration of motion.

In the review of the invertebrate animals we saw that in the lowest there was no alimentary canal or mouth. Then by a pouching of the external surface we had formed an alimentary sac with but one aperture, and this sac was external to the body. When we advanced up the scale of animated beings we found that this sac was elongated and recurved, having an inlet and an outlet, thus forming a complete intestine. In crustaceans we saw that the exoskeleton, or hard outer shell, was modified into maxillæ and maxillæpeds, and that these, also in common

with other parts of the surface, were covered with tuberosities, giving a dentate or toothed appearance to the jaws. Higher in the scale we found the mouth armed with an odontophore or toothed strap. Then we came to that great sub-kingdom vertebrata, where the hardened framework of the body was internal and covered with layers of muscles, skin, &c. And as we ascend in the scale of organisation, we find an increasing differentiation of tissue, first upon the surface, and gradually towards the interior, in a similar manner as we observe the formation of a denser envelope or cell wall upon the periphery of an elementary cell. In a similar manner also, and by the same causes, is produced that differentiation of tissue which we recognise as bone, cementum, dentine, and its varieties. Now, to discuss the causes which have produced the complexity of all organisms, such as the various tissues, their shapes, and functions, would be to discuss evolution. This is not the time for such discussion, but to carry out the programme I have laid out, I must necessarily allude to those causes as briefly and as clearly as I possibly can.

Suppose a mass of homogeneous, structureless organic matter termed protoplasm or bioplasm, and you mentally represent roughly an analogue of a primordial utricle, or, if you please, first created organic mass. The characteristic of such a mass is constant susceptibility to change in the form of integration of matter, or of disintegration of matter; such characteristic being expressed by the "instability of the homogeneous." The homogeneous becomes less homogeneous; or, the homogeneous becomes heterogeneous; or, in other words, the simple progresses towards the more complex. The simplest organic matter possesses this characteristic property. By its working slight differences are produced, and by the slow accumulation of modifications upon modifications, and by slow divergences resulting from the continual addition of differences to differences, are produced all organic forms. To reduce this to a practical expression, it can be said that the differences between one animal and another are due to additions and suppressions of parts. Now, in seeking for the causes of such differences between animals, we are led to the causes of this instability of the homogeneous; and here we find the key to organic evolution.

In my introductory lecture to the course on Histology,* I alluded to the physical forces, and spoke of the correlation of the physical forces, of their metamorphoses or interchangeability. To give a simple illustration of the fluctuation of physical forces, consider for a moment night and day, winter and summer; how those changes visibly affect plants and animals; how in the day light plants break up carbonic acid, fixing the carbon in their tissues, and liberating the oxygen: how, by the influence of sun heat, evaporation of moisture from their leaves aids the upward circulation of fluid, thus affecting the parts so acted upon: how animals store up energy during sleep, and discharge a greater amount during waking hours. Such, then, briefly, are daily and yearly fluctuations of the forces surrounding us, as taught according to meteorology. Then, again, by examining the formation of the crust of the earth we find various strata of very different kinds of material, which must have been formed at different ages, and under very different external or surrounding conditions. So, here, geology teaches a fluctuation of physical forces extending through ages. Astronomy also yields further evidence of this variation through astronomic periods. Now these changes in the inorganic forces which influence the medium or environment of organisms, affect not only visibly as we have seen, but also invisibly, the instable homogeneous matter of which organisms are composed. In the changes of the physical forces, ever in progress, are to be found the inorganic factors, to which all organisms are exposed, in the process of evolution. These *external* factors can be grouped as astronomic, geologic, meteorologic, and organic. As *internal* factors in the process of evolution are the several agencies grouped as "natural selection."

By the actions of those external factors, and of those internal factors, upon unstable homogeneous matter—i.e., matter ready for change—are differences produced. Difference is added to difference, and the result produced is that degree or accumulation of differences termed variety. Variety is simply a less definite expression of species; and species a less definite and more special expression of genus; and so on, genus of order; order of class; class of sub-kingdom; sub-kingdom of kingdom.

* *Vide* page 9.

These are expressions of a classification of different groups of organic phenomena, it may be in their extremes broadly contrasted from one another, but shading off one into another. "Evolution being a universal process, one and continuous throughout all forms of existence, there can be no break, no change from one group of concrete phenomena to another, without a bridge of intermediate phenomena."

In short, by the same agencies which produce differences, by the same mental process through which we pass to establish or mentally represent those differences; by precisely the same agencies acting through time, and by precisely the same mental process carried farther, do we necessarily and inevitably arrive at the conclusion that varieties and species are so produced—that species are mutable.

Admit the mutability of species, and by the same mental process do we necessarily admit evolution as applied to the animal kingdom, to the vegetable kingdom—to the organic world.

To give a general expression to the causes of evolution: the forces acting upon organisms are multiform, and ever undergoing slow variations and complications; the organic units are extremely unstable, and the slightest variation in their conditions destroys their equilibrium, and causes them either to assume altered structures, or to decompose; that the multiplication of effects conspires with the instability of the homogeneous to work an increasing multiplicity of structure in organisms.

Such is a brief, a too brief, exposition of organic evolution.

To apply these general conclusions to the differentiation of tissues, and to show, though it may be in a hypothetical manner, the process of evolution in the production of some specialised tissues, I shall give the following illustration of the development of the vertebral column, the great axis of the higher animals. Let us begin with the simplest type of a vertebrate animal. The fish has a mode of locomotion which involves alternating transverse strains; along with this ever recurring and alternating transverse strain is there a resistance to the strain, brought about by the different degrees of the incident forces of tension and compression. The same forces acting upon an aggregate of homogeneous organic matter would lead to the development of the

notochord, or the rudimentary structure which eventually becomes the vertebral column, not only of the fish, but of all vertebrate animals. In the amphioxus—the vertebral column is represented by a jelly-like cord, on which the divisions of the vertebræ are simply indicated by very slight markings. The notochord in a more advanced stage is cartilaginous, and of one continuous piece. Later it becomes segmented, segmentation beginning at the surface. Also first upon the surface it becomes calcified, while the interior remains cartilaginous: such is the condition of the skeleton of cartilaginous fishes. Higher in the scale there is perfect ossification of each segment, and complete bony vertebræ. These are phenomena which, generally speaking, are to be observed even in the human embryo. The human vertebral column, from its embryonic condition to its adult form, passes through all these phases. Thus by actions and reactions of forces, which are ever and even now going on, are definable possible causes of those rudimentary or primitive structures which the simplest vertebrate animals present. Let me make these phenomena more clear to you. That compression produces hardening we have the fact readily observable by all, that even within certain areas of the hands and soles of the feet on which pressure is habitually greatest, there the skin is thickest; and in each person special points exposed to special pressures becomes specially dense, often as dense as horn; witness a similar thing in persons who use their edentulous gums in attrition, and those whose gums are shielded by artificial plates.

So, then, by the action and reaction of forces upon the instable homogeneous is heterogeneity or difference produced. Difference is added to difference according to the laws of morphological or structural development. As we saw with regard to the hands and feet, how use produced difference or thickening of the parts, so use or function still further aids the production of differences according to the laws of physiological development. It will also be apparent that the being most differentiated, most fitted to its environment, will have the best chance of surviving its competitors, and of propagating its kind; and also the correlative, that the less differentiated, or less fitted to the environment, will succumb: So, also, is there in all cases a progressive adaptation, and a survival of the most adapted.

To the phenomena grouped in and expressed by evolution—"or the integration of matter and dis-integration of motion, a necessary antecedent to the differentiation of matter so integrated"—I say, by evolution only can a scientific explanation be given of the complexity of organisms; this necessarily including differences of structure and function of tissues, of structure, and function of animals. Remembering what I a little while ago impressed upon you, that in the vertebrata all teeth are developed from a part of the mucous membrane of the alimentary canal, and that they consequently are generally homologous with the mucous membrane; remembering this, and by the application of the factors of evolution will the differentiation of that tissue for dental purposes be comprehensible. In other words, with time and evolution are symbolically comprehensible the production, in successive generations, of such specialised tissues for dental purposes as horn, bone, cementum, osteo-dentine, vaso-dentine, plici-dentine, true dentine, and enamel.

The morphological or structural relations of those tissues I shall proceed to consider in my next lecture.

OUTLINES OF MEDICINE,

BY

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GENERAL DISEASES.

Inflammation (in, in, and flamma, a flame).

Phlogosis (φλόγωσις, a burning).

VARIETIES.—(1) Acute; (2) Chronic.

Acute Inflammation.

SYMPTOMS.—(1) Local; (2) Constitutional or General.

Local Symptoms. When *External*, these are pain, swelling, redness, and heat. The pain is produced by the larger supply of blood to the nerves of the part, as well as by the pressure of the surrounding textures; the swelling and redness arise, the latter from the increased amount of red blood which the vessels of the part contain, the former from the same cause in addition to exudations of lymph,

albumen, or serum. The heat never exceeds that of the blood, although it is greater than that of the other superficial parts. When *internal*, the symptoms are functional disturbance and pain; the former is indicated in secreting organs by alteration, diminution, or entire suppression of the proper secretions; in other organs there are varying conditions of excitement: in the lungs there is dyspnoea; in the ear and eye, intolerance of light and sound; in the heart, palpitation; in the brain, delirium. The pain is increased by pressure in those situations where pressure can be applied, or in milder forms of inflammation pressure may produce pain in parts where it did not previously exist.

Constitutional or general symptoms.—These are known under the name of *inflammatory fever*. These symptoms are thirst, furred tongue, pain in the limbs, back, and head, rigors, languor, and loss of appetite. The pulse is full, rapid, or hard—its character, however, differing in different inflammations—the skin is dry, the urine scanty and high coloured, and there is constipation. The blood when drawn is, in certain inflammations, buffed and cupped, *i.e.*, concave with a buff-coloured coating. When the inflammation occurs in unhealthy persons or when it is severe and extensive, severe symptoms of constitutional irritation are induced. These are great restlessness, rigors, hurried respiration, a sharp, quick, pulse, and low muttering delirium; death may occur from exhaustion.

TERMINATIONS.—(1) Resolution or cure; (2) Metastasis or change of seat; (3) Effusion of serum; (4) Effusion of lymph; (5) Suppuration or formation of pus; (6) Ulceration; (7) Gangrene; (8) Mortification or sphacelus.

CAUSES.—The sanguine temperament, general weakness, febrile and cachectic conditions, are said to predispose, whilst as exciting causes may be added, (1) Chemical and mechanical irritants; (2) Heat and cold; (3) Morbid poisons in the blood; (4) Local congestion; and (5) The excitement in the circulation that takes place in fevers.

MODIFICATIONS in the inflammatory character. These may occur from (1) The texture; and (2) The condition of the system.

(1) *The Texture.*—*Serous* membranes in acute inflammation become the seat of adhesive inflammation, but very rarely of the suppurative; in the *mucous* membranes

inflammation gives rise to the production of pus, increased flow of mucus, and occasionally lymph, and these membranes are liable to suppuration, ulceration, and softening, but never to adhesion of their surfaces. The inflammation of the areolar tissue is termed *phlegmonous*, and induces the secretion of serum, and frequently of lymph and pus, and it very commonly ends in abscess. Among *fibrous* tissues, ligament and tendon are liable to become gangrenous, and cartilage may ulcerate. The parenchyma of organs may be softened by acute, or hardened by chronic inflammation; or the inflammation may end in abscess or gangrene. Inflammation of the bones terminates in caries and necrosis. The skin resembles the mucous membranes in its liability to suppuration. In inflammation of the *serous* membranes there is acute pain, there is an excess of fibrin in the blood, the loss of blood is well borne, and the fluid itself is buffed and cupped, the heat of surface and muscular debility are increased, the frequency of the pulse is accompanied by hardness, and there is sometimes tendency to delirium. In the *mucous* membranes, on the contrary, the pain is slight, the loss of blood not well borne, the fibrin not increased, and there is no buffed and cupped appearance in the blood. A certain doubtful resemblance may be observed, however, between the mucous and serous membranes in the formation of those *false membranes* which occur in diphtheria and some allied diseases of the mucous membrane of the lungs and bowels.

2. *The condition of the system.*—In *scarlatina*, the mucous membrane of the pharynx, and the parts in its vicinity, are liable to ulceration. In *measles*, there is a similar inflammation to that which arises in an ordinary cold, and this inflammation may induce effusion of mucus and pus in the larynx and trachea. In *small-pox*, suppuration and gangrene frequently follow the inflammatory action. The indications of *acute adhesive inflammation* are a strong, hard, wiry, and rapid pulse, heat of skin, but no giddiness or headache (unless the membranes of the brain are affected), no alteration in the character of the urine, and the loss of blood is well borne.

Suppuration is indicated by sharp, agonizing pain, sometimes by repeated rigors, succeeded by heat and sweating (hectic fever). In *gangrene*, the pain ceases suddenly; the

entire system is in a state of collapse; the features are sunken, there are pallor and cold clammy sweats, delirium, a dry brown tongue, the pulse is feeble, small, and rapid, and the teeth are covered with sordes (the typhous state).

PATHOLOGY.—From the artificial production of inflammation in the lower animals, this process has been found to consist in:—

(1) *Changes in the blood-vessels and circulation.*

(2) *Exudation of liquor sanguinis, and migration of white blood corpuscles.*

(3) *Alterations in the nutrition of the inflamed tissue.*

(1) The first results of inflammation set up by irritation of the mesentery (a transparent tissue) is a *dilatation* of the arteries, followed by the same condition in the veins, and accompanied by an *acceleration* in the blood-flow, lasting for about twelve hours. Then follows a considerable *retardation* in the circulation, the dilatation of the vessels still continuing. During this retardation the leucocytes or white blood-corpuscles congregate in the capillaries, and cling to the sides of the vessels, and then by their active movements permeate the vascular walls, and enter the surrounding tissues.

(2) The blood current passing over the accumulated leucocytes, some of these gradually sink into it, and pass into the tissues around. In their passage button-like elevations appear to spring from the outer wall of the vessel and these by degrees assume the form of pear-shaped bodies. They then become severed from the wall, and thus complete their passage. The red blood corpuscles at the same time pass through the walls of the blood-vessels, but in far less number, and chiefly through the walls of the capillaries.

The exudation of liquor sanguinis constitutes the so-called *inflammatory effusion*. In this a larger amount of fibrin and albumen is contained than in the transudation of simple mechanical congestion, whilst the phosphates and carbonates are also in excess. The large number of cell structures contained is remarkable, the particular tissue inflamed, and the severity of the inflammation occasioning considerable variation in the nature and quality of the effusion.

(3) The nutritive activity of the cellular elements is always increased; cells which ordinarily undergo no

change in form or movement send out processes and alter variously in shape. Cell-proliferation is one of the earliest of the nutritive changes.

The process of *suppuration* is a frequent result of inflammation, and it may be broadly stated that according to the intensity of the inflammation so is the abundant formation of the pus.

Pus is essentially composed of a liquid almost identical with liquor sanguinis, and holding cells suspended in it. This liquid also contains albumen, pyin, chondrin, fatty matters, and inorganic substances. The pus corpuscles closely resemble the white globules of the blood, but they are somewhat rougher in outline and contain more nuclei, although some authors believe them to be identical. They are spherical, semi-transparent, from $\frac{1}{2500}$ to $\frac{1}{3500}$ of an inch in diameter. The addition of acetic acid causes the cells to swell up, increasing their transparency, and rendering the nuclei more visible. The pus corpuscles are derived either from the blood or from the inflamed tissue, and the suspending liquid is undoubtedly the liquor sanguinis.

Chronic Inflammation.

This differs from the acute form in the lower degree of the severity of the irritation occasioning it, and in the duration of its action being in general much more prolonged. The exudation of liquor sanguinis and blood corpuscles is not so abundant, and the tendency is eventually to produce an increase in the amount of the tissue inflamed; the redness is more dusky in tint; the pain is sometimes very slight, and the heat of a mild character—an exception to this is, however, observed in chronic rheumatism. When the internal parts are affected, the secretions are performed languidly, and the quantity of the secretion is diminished. Should the areolar tissue be the seat, serous effusions are the usual result.

When inflammation is the result of an injury, it is termed *Traumatic*; when it is due to septic influences, as in pyæmia and tuberculosis, it is called *Infective*; when the cause is not apparent the name of *Idiopathic* is given; and as *Specific* inflammations may be instanced the "rash" of small-pox, the inflammation of the skin and mucous membranes in syphilis, and the inflammation of the intestinal structures in typhoid fever.

TREATMENT.—In *acute* inflammation the remedies are either *general* or *local*.

The *general* remedies are blood-letting, tartarated antimony, and mercurial preparations, and in slight cases saline aperients are generally useful. The *local* remedies are leeches, scarification, and cupping, free incisions of the parts affected, fomentations, poultices, and counter-irritants. Nitrate of silver and perchloride of iron are much employed in the treatment of exposed mucous surfaces.

In *chronic* inflammation, local remedies are chiefly of use. These may comprise leeches and cupping, or such alteratives as iodine, &c., but internal remedies are also very beneficial.

Dropsy. Hydrops (*ὑδρῶς* fr. *ὑδωρ* water).

Anasarca (*ἀνά* through *σαρξ* the flesh).

DEFINITION.—Effusion of serum in the areolar tissue, and sometimes into serous cavities.

Local effusions into the areolar tissue, are known by the term *Edema*, whilst to effusions into the different cavities of the body the following names are applied:—viz., *Hydrocephalus* (effusion in the head); *Hydrothorax* (effusion in the chest); *Hydropericardium* (effusion in the pericardium) *Ascites* (abdominal effusion); *Hydrocele* (effusion in the scrotum); and *Ovarian Dropsy*.

VARIETIES.—(1) The Dropsy of Debility; (2) Febrile; (3) Pulmonary; (4) Cardiac; and (5) Renal.

SYMPTOMS of Anasarca.—The first indications are usually a swelling of the feet and ankles, gradually ascending, and most of the body is involved. The parts affected *pit* on pressure. The skin is cold, dry, and pallid, and if there be much effusion the surface is tense and shining. After a time the effusion oozes at different points, and the surrounding skin becomes excoriated, or small blisters are formed, and sloughing may take place.

CAUSES AND DIAGNOSIS.—Purely *local* dropsy may depend upon *mechanical obstruction* of some large vein; thus the pressure of a tumour upon the descending vena cava may produce cedema of the head, neck, and upper extremities. The dropsy of debility may be recognised by the absence of the causes of other forms of dropsy.

Febrile dropsy may be known by the history of previous exposure to cold, or by its occurrence after scarlatina.

Pulmonary dropsy may supervene upon acute bronchitis, or when the lung has become solidified by tubercle or cancer.

Cardiac dropsy may be caused by disease of the valves of the heart, inducing regurgitation of blood, and the consequent congestion of the venous system by the obstruction of the venous blood in its passage to the lungs.

Renal dropsy can be recognised by the condition of the urine, and the absence of serious pulmonary and cardiac symptoms.

The *treatment* will, of course, depend upon the particular dropsy, and will be described in its appropriate place.

Davis's Gold Amalgam.

By T. WILSON HOGUE, D.M.D., HARVARD,

HAVING recently had a sample of Davis's Gold Amalgam analysed for our own satisfaction, it may interest some to know the result, especially when so much is now being said on the subject of amalgams.

The average of four analysis gave :—

Gold	.	.	.	4 . 0
Silver	.	.	.	41 . 5
Tin	.	.	.	51 . 4
Copper	.	.	.	8 . 3
				<hr/> 100 . 2 <hr/>

If gold and silver coin were used in the manufacture, this would account for the percentage of copper. Notwithstanding the recently published opinions of Drs. Flagg and Chase in favour of plastic fillings, it will be hard to convince the dental profession that there is any known material which equals gold as a filling for carious teeth, where its use is indicated.

However, amalgam is a most useful material, and we intend to try the formulas so kindly given by Dr. Chase, and which appeared in the last number of the "Dental Review."

BOURNEMOUTH.

Rest,

By PROF. EDWIN T. DARBY, D.D.S.

Abstract from "Dental Office and Laboratory."

THE average American engaged in the active pursuits of life, needs, and his system demands, periods of rest and recreation.

It is impossible for man, constituted as he is, to follow incessantly one train of thought, or toil continuously in a given direction without injury to both the physical and mental system—nay, without insanity. The fact that we are an overworked people, both in mind and body, is proverbial, and with each year the truth is becoming more apparent.

That nervous diseases are upon the increase, no one who has given the matter a moment's thought can deny. Consider for a moment the sudden deaths from heart disease, from apoplexia; the wrecks of mind and body which meet us on every hand; the care-worn faces and tottering gait which we see in early manhood, but which belong only to later life. Is this because we are physically and mentally inferior to other nations? No, on the contrary, experience has shown that under favourable circumstances the American people are both physically and mentally equal to any of the old world, and that the impaired health of our people is due almost entirely to the rush with which they pursue their business callings, accompanied with high living and insufficient rest and recreation.

What has been said of general business life is eminently true of professional life, and especially so of the profession of Dentistry. There are few men in the profession, who have been in regular practice for ten or more years, who are healthy men. Do you not, by a moment's reflection, recall a score of professional friends who are dyspeptics? whose nervous system is more or less shattered; whose mind is just a little off balance; who, in short, is a little the worse for his ten years' service?

Is Dentistry an unhealthy occupation? Followed as it ought to be, it is not. Followed as it is by the majority of men who are so fortunate (or unfortunate, perhaps) as to have a full practice, it is.

The dentist who works an hour or two at the chair in the morning, and an hour or two in the laboratory in the afternoon; who takes ample time for his meals, and rests

after they have been eaten ; who leaves his office at three or four o'clock in the evening, and drives in the park, or digs in the earth, may plod on for years, perhaps a score of them, and show no signs of nervous disorder, nor experience any symptoms indicative of failing health. To such an one, and followed in such a way, the practice of Dentistry is not unhealthful. But look again, in yonder city is your professional brother, who enters his office at eight or nine o'clock in the morning, and stands at his chair incessantly engaged in the most delicate of manipulations, and upon the teeth of the most sensitive organizations, until four or six o'clock in the evening, only stopping to partake of his mid-day meal, which ordinarily is but a light lunch. He does this not one day only, but every day from Monday morning until Saturday night, week after week, and month after month. Followed in this way, Dentistry is an unhealthy occupation.

But, you ask, is it the close confinement that breaks him down in health? Is it the hours spent in work that makes the dentist so tired when night approaches? It is not work that kills men ; it is the incessant strain upon our sympathies while inflicting pain upon our voluntary victims. It is the responsibility, which every conscientious man feels, to do the best thing possible for those who seek his services. It is the work of hands, and mind, and heart. It is the effort to keep one's self in one grand equipoise—the effort to be courteous, and gentle, and kind, when we feel nervous, and cross, and perplexed. It is the daily routine of care, the constant thinking of the same things day after day, week after week, and year after year.

It has been estimated that one-fortieth of the dental profession become insane, and as many more dissipated ; and at times I do not wonder that such is the case. I recall at this moment the history of two men, eminent in their day and generation, who commenced the practice of Dentistry within a few miles of the beautiful lake upon whose borders I sit to-day. The first, after an eventful life, a large and lucrative practice of many years, became dissipated and insane, and died by his own hand. The other, removing from a country village to the metropolis of our nation, enjoyed for years the confidence of many, and secured to himself a large and wealthy practice. Of a highly organised nervous temperament, he felt his

health giving way under incessant work, and resorted to stimulants, which with him soon became a necessity. With bad habits once formed, he went from bad to worse, and finally died a miserable drunken pauper in that city's almshouse.

Nor are similar histories rare.

That the practice of Dentistry is peculiarly trying to the nervous system I think none who have given it a few years' trial will deny. It is a constant drain upon the nerve force, and requires on the practitioner's part the best care to avoid disastrous consequences. Each day takes from us more than night can give, and by this exhaustive process we soon approach the night of death.

How, then, is the dentist to preserve his health and render himself best fitted to perform his work, and prolong his life?

First: By a systematic arrangement of his time, and, when once arranged, not to deviate from it. I have the profoundest admiration for the man who has courage enough to lay aside his instrument, and cease work at three or four o'clock in the afternoon. In my opinion such an one will reap a larger harvest in the end than his neighbour who stands at his chair an hour or two longer each day. There should be periods for rest, and these should be daily. The dentist should spend an hour or two at least of each day in the open air, and, if possible, in the sunlight. He should walk, or ride horseback, row in a boat, dig in the earth, play base ball, or do something which will be as complete a change as possible from his daily work. He should engage in something which will change the current of his thoughts; something that will bring into action different muscles of the body; something, in short, totally and entirely different from his professional life.

Second: The dentist should have an annual vacation of at least a month. Eleven months is long enough to pursue one train of thought, one round of duty. He should, if he be a city practitioner, go to the country, where new scenes will be presented to his eyes, new thoughts occupy his mind, and new food delight his palate. Let him spend a few weeks in the Adirondack wilderness, sleeping on hemlock boughs in her forests of pine, and hemlock and spruce; fishing in her limpid streams; chasing her bound-

ing roebucks, and eating her delicious venison and trout. Or let him go to old ocean, and sail on her restless billows, bathe in her ceaseless breakers, and sleep that sleep which is restful.

When once the careworn, nervous, dyspeptic dentist has gone forth amid scenes like these; when he has mingled with nature in her grandest forms, he has put himself in an atmosphere of health; and, whether sleeping or waking, he is drinking in that which rejuvenates his wasted energies, restores the balance of his mental capacities, and refits him for the duties of future years. After a month thus spent, he returns with new desires and new purposes. He enters upon his practice better prepared to perform his operations thoroughly; a better man, physically, mentally, and morally, for the rest and recreation he has taken.

Odontological Society of Great Britain.

THE usual monthly meeting of this Society took place at 40, Leicester Square, on Monday, the 3rd inst., S. Cartwright, Esq., F.R.S., President, in the chair.

Mr. MUMMERY exhibited samples of a new metallic stopping, invented by Dr. Slayton, an American dentist practising in Florence. The advantages claimed for it were: That it did not discolour the teeth filled with it; that it did not itself become discoloured in the mouth; that it was not affected by the fluids in the mouth; that it welds thoroughly, *even when wet*; that it is easy to work, and that it contains no noxious ingredient. The samples, and also some teeth filled with this stopping, had been sent to Mr. Mummery by Mr. Dunn, an English dentist practising in the same city, who had tried it in forty-six cases during the last six months with most satisfactory results. So far as he had seen, it possessed all the advantages which its inventor claimed for it, though, of course, the time was too short to enable him to speak definitely of its lasting qualities. Gold could be welded on to it when dry, so that in the case of an exposed cavity the surface of the filling could be covered with a layer of gold to ensure hardness; but Mr. Dunn had found a large filling in the crown of an upper wisdom tooth in a perfectly satisfactory condition after six months' use. He thought it would

prove especially useful for stopping deciduous teeth, and that it promised to be a very valuable addition to the materials already in use for filling teeth.

Mr. WEISS called attention to the fatal case of swallowing teeth reported in the *Times* of November 6th. The patient, an old man of 76, swallowed his teeth while eating his dinner. Two months previously the plate he was wearing had broken in two, but he had still continued to wear the larger half. He was attended by Dr. Walsh and by Mr. Durham, of Guy's Hospital, but the sharp edge of the broken plate was so firmly impacted in the throat that it could not be extracted, and on account of his advanced age pharyngotomy was not attempted. He died on the fourth day after the accident. Mr. Weiss added that in this as in other cases the patient had only himself to blame. He was recklessly wearing a broken denture which did not fit him. He exhibited the specimen which had been courteously placed at his disposal by Dr. Hardwicke.

Mr. CHARLES TOMES showed a vulcanite flask which had been sent to him for exhibition by Mr. Palmer, of Cheltenham. It was a modification of Trill's flask, but the mode of fixing the parts was different, and an opening had been cut in front and closed by a moveable plate. By removing this and the top of the flask, both the palate behind and the gum in front of the teeth could be exposed at the same time, the model remaining rigidly fixed. Mr. Palmer thought it would be very useful for cases in which the teeth were very close to the gum, so as to make it difficult to get at the rubber in front of the mouth as well as at the back without having the flask in two parts, the teeth in one and the model in the other; this he had found a frequent source of bad fits.

He then showed a tongue-holder invented by himself. He found that with it and his self-acting saliva pump he could dispense with the rubber-dam in many cases where he had previously used it.

He also exhibited some forceps for the extraction of almost divided upper molar stumps. One blade terminated in a spear-shaped point; this was forced into the centre of the stumps, a small depression being drilled if necessary to receive it, and the roots having thus been divided could be at once extracted without change of instrument.

Mr. TOMES then showed an odontome attached to a lower molar tooth which he had found in the Museum. The tumour, which was the size of a large pea, projected from the back of the tooth. On section, one root and one side of the pulp cavity was seen to be normal, the other side being expanded to form the mass; the cementum of the tumour was continuous with that of the tooth; the dentine, which was imperfect and irregular, was not continuous. Evidently the tumour had originated in the pulp cavity, had outgrown this, had forced its way out, and then become calcified. There was no history attached to the specimen.

Mr. MOON showed a large radicular odontome which he had removed from a patient at Guy's Hospital, and read notes of the case. The patient, who was a married woman, 38 years of age, stated that eight years ago a swelling appeared on the left side of the face, above the angle of the lower jaw: it lasted for some months, and was attended with great pain. When it subsided, and she was again able to open her mouth, a bony mass could be seen above the left lower wisdom tooth. This gradually increased in size until, on the patient's visit to Guy's Hospital, the upper part was quite hidden behind the last upper molar and the tuberosity of the superior maxilla. Throughout the eight years the patient was subject at intervals of a few months to a recurrence of the swelling of the face and the attacks of pain; latterly the wisdom tooth had been pushed inwards towards the tongue. The removal of the odontome was very easily effected by extracting inwards the tooth to which it was attached: the tumour had polished facets on its anterior aspect, caused by attrition against the second upper molar.

The PRESIDENT then called upon Mr. Ashley Barrett to read his paper on the "Symmetrical Extraction of Teeth."

Mr. BARRETT began by stating that though he could not claim any novelty in his subject, yet it would open up some questions of practical importance. It was useful occasionally to go over old ground, and to reconsider points of practice by the light of the ever increasing knowledge of our art.

To avoid making a long paper, he would at once state briefly the facts to which he desired to call attention. As a rule, the four sixth-year molars had not been long erupted.

before they undergo curious changes; these advance rapidly, and before long the dentist was called upon to extract one or more of these teeth. Now, under these circumstances, and especially if there existed a tendency to overcrowding, he believed the best practice was to extract all four of the first molars; if this was done, the 12-year molars would come forward, and the spaces left by this "symmetrical extraction" would be obliterated. But this result would not follow unless all four of the teeth were removed. If, for example, only those in one jaw were removed, the tooth behind would probably be kept back by the posterior edge of the other first molar, which, after losing its antagonist, was apt to get raised slightly above its neighbours. What he had said of the molars would apply equally to the bicuspid.

As regards the age at which symmetrical extraction should be practiced, he thought it was best not to extract the first molars until the second were erupted, since the friends of the patient would be disappointed, if, after the operation, the appearance of these teeth was greatly delayed, and possibly they might not appear at all. On the other hand, it was well not to wait long after their eruption, because they would then move more easily into their new position. The most favourable time to do it was, therefore, shortly after the complete eruption of the second molars, or when the patient was about 12 years old.

In conclusion, he would say that he thought the causes of this tendency of the teeth to advance were rather obscure. The growing wisdom tooth might, perhaps, supply the *vis a tergo*, but he should feel indebted to any gentlemen who would supply a good explanation of the phenomenon.

The PRESIDENT said that although the subject which Mr. Barrett had chosen was not new, it was one of considerable practical importance. He quite agreed with Mr. Barrett that the symmetrical extraction of the first molars gave, in many cases, very satisfactory results, but there was one fact in connection with the operation, when performed for the relief of overcrowding, which should be kept in mind, since it was occasionally a cause of disappointment, and that was that though the back teeth readily came forward to fill up the gap, the front teeth did not always move back, and so the overcrowding in front was not relieved. For this reason, some advised that one of

the bicuspid should be removed on each side, instead of the molars, as being less open to this objection.

No doubt the friends of young patients often objected to the removal of sound teeth merely for the sake of symmetry, and he had sometimes been induced to give in to their opposition. But he had generally seen reason to repent of his weakness, for if the teeth were not removed on both sides the central incisors were apt to get pushed across the middle line of the mouth, and the symmetry of the mouth was thus seriously impaired.

Mr. MUMMERY said he was glad to hear Mr. Barrett advise that the first molars should not be extracted until the second molars were completely erupted; this was a point on which he should lay great stress. A common result of premature extraction was that the second molars, instead of rising vertically into their places, lean forwards, and never articulate properly with their fellows. He thought that the first molars had received a worse character than they deserved. The fact that in most cases nothing but extraction was possible was not due to any special vice in these teeth, but to the carelessness of parents in not bringing their children soon enough. When the large size of the pulp cavity of the first molar was considered, it must be evident that to stop such a tooth successfully in a young and sensitive patient the disease must be arrested at an early stage. He could call to mind several families in which the elder children had lost their first molars, but, on extracting them, he had given directions that the younger members should be brought to him as soon as any disease appeared. These he had been able to stop successfully, and they had grown up without any extension of the caries. For the relief of overcrowding, he preferred to extract a pair of bicuspid, but *always a pair*.

Mr. OAKLEY COLES: That it was very questionable how far overcrowding could be prevented by extracting teeth early—*i.e.*, before the molars were completely erupted. He thought it had been pretty well ascertained that the growth of the jaw depended to a great extent on the growth of the teeth, and that unless all the teeth were present, the jaw was not fully developed. This was well exemplified in the case of the hairy "Kastroma" people who were exhibited in London a few years ago, and whom he had an

opportunity of examining carefully in company with Mr. Chas. Tomes. These people were practically edentulous, and they found that the jaw of the old man of 70 was not more developed than that of the boy of seven years old. The practical inference to be drawn from this was that in young patients the teeth should be left in as long as possible, and that none should be extracted, except under urgent necessity, until all were erupted.

The PRESIDENT said he thought Mr. Coles' statement went a little beyond the truth. Certainly, he had seen cases at the Children's Hospital in which the gap left after the extraction of a tooth had lengthened perceptibly, showing that the jaw grew in spite of the removal of teeth.

Mr. HUTCHINSON remarked that, although the subject was old in 1856, when Mr. McClean read his paper, still it had not been fully discussed since then, and might, therefore, interest many of the members present.

Mr. MUMMERY had raised the question whether it was not possible to stop the first molars. He thought the practice was generally to extract them, and if they were much decayed, and the teeth in front crowded, this was the only thing to be done; but if the teeth were regular, and the molars only slightly decayed, he should try stopping. For the relief of simple overcrowding, he much preferred to extract the first bicuspid: he found that the neighbouring teeth fell together much more quickly and easily after the removal of these teeth than after removal of the molars, and that the use of regulation-plates was unnecessary. He thought that the tendency of the second molars to move forwards was partly accounted for by their close relation to the attachment of the buccinator muscle. Mr. Hutchinson then proceeded to exhibit some models illustrating the evil effects of unsymmetrical extraction.

Mr. MOON said there was one condition which should always contra-indicate extraction of the first molars—viz., where the cutting edge of the lower incisors infringes upon the necks of the upper. He thought that the chance of the bicuspid moving back depended a good deal on the position of the canine. If this tooth was in process of eruption, its wedge-like shape would, as it descended, tend to force back the bicuspid; but if the canine was already fully developed, there was less probability of the bicuspid retiring.

Mr. BARRETT, having been called upon to reply, said that he had nothing to add or to explain except that he thought Mr. Hutchinson's explanation of the cause of the forward movement of the molars a very unlikely one: he could not see how the superficial attachment of the buccinator muscle could influence a tooth deeply implanted in the bone.

Messrs. FAIRBANK and HUTCHINSON having been chosen to act as Auditors,

The PRESIDENT announced that the Annual Meeting will take place on the 14th proximo, and that it would be made "Special," for the consideration of some proposed changes in the bye-laws. The meeting then adjourned.

Review of Books.

Elements of Dental Materia Medica and Therapeutics with Pharmacopœia.

By JAMES STOCKEN, L.D.S.R.C.S. London: J. & A. Churchill.

THIS work, which is dedicated "To the Medical Officers and Lecturers of the National Dental Hospital and College," contains a great amount of information which will be interesting and useful to the Dental practitioner.

The systematic arrangement of the *Materia Medica* and *Therapeutics*, giving Synonyms, Formulæ, Characters, Preparation, Physiological Effects and Therapeutics, Uses and Doses, together with the clearness of style and absence of useless matter, are virtues which are worthy of mention, and which have their own value.

The index to the *Materia Medica* is so utilised that it also forms a Posological table. This is certainly a novel arrangement, and presents at a glance the dose of a preparation, and the respective page at which the *Materia* is discussed.

To our readers the subject-matter will, to a great extent, be known; but Mr. Stocken says, "Since its appearance in sections in *The Monthly Review of Dental Surgery* the matter has been thoroughly revised, and several additions have been made." By comparing the revised article on the Physiological Effects of Nitrous Oxide with that which appeared in our pages, we observe some very important additions, and regarding that agent the following deductions and propositions are set forth:—

"Nitrous oxide, when passed through arterial blood in a test tube, darkens its colour.

"When nitrous oxide is inhaled, the patient assumes a dusky hue, and the blood which flows from a ruptured vessel is dark in colour.

"The gas eliminated from the lungs is apparently in the same condition as when it entered.

"Is the lividity due to the blood not being oxygenated, to carbonic acid taking the place of oxygen, or to an altered condition of the blood, the result of the immediate presence and (physical) action of nitrous oxide?

"Anæsthesia would appear to be due to an altered condition of the blood, whereby the molecular dynamic changes are interfered with; that such an interruption is probably due either to the retention of carbonic acid, or to the presence of nitrous oxide, or—as in both instances—to the exclusion and absence of oxygen."

These three conclusions, as to the probable cause of anæsthesia by nitrous oxide, are certainly of considerable importance, and calculated to further the investigation, and finally to set at rest our uncertainty of the action of an agent which is so largely and but empirically used by the Dental profession.

This brings to our remembrance certain experiments conducted some years ago by Dr. B. W. Richardson. He took two animals of the same species, weight, &c., placed the one in a bell-jar containing an atmosphere of ether or chloroform, and the other animal in a bell-jar containing nitrous oxide. The animal in the nitrous oxide died first. This result followed each experiment. Thereby was proved that in our anæsthetic agents nitrous oxide was the most deadly. Yet this agent is most used, and we definitely know not how it acts. Surely this empiricism is a stigma upon us in this age of science and investigation.

Great care has evidently been taken in preparing the work, inasmuch as there is a list of some thirty "Authorities Consulted." Several new preparations having, or worthy of, a place in Dental Materia Medica are carefully inserted. Among these there is *Amyl Nitris*, *Gelsemium Sempervirens*, *Camphoræ Monobromidum*, *Collodium cum Cantharide*.

It would have been advantageous to the student had there been a table of symbols of quantity and their equivalents; a more extensive list of antidotes to poisons, and a more exhaustive vocabulary of terms used in therapeutics.

The Pharmacopœia contains over seventy formulæ, and is also published separately by the Medical Committee of the National Dental Hospital, for the use of their students.

Mr. Stocken is to be congratulated upon the merits of his book. It is one we can with confidence recommend. It is the only work upon the subject published in the United Kingdom, and ought to be in every dentist's library.

Correspondence.

We do not hold ourselves responsible for the views expressed by our Correspondents.

TO THE EDITOR OF "THE MONTHLY REVIEW OF DENTAL SURGERY."

"PRACTICAL OBSERVATIONS ON THE DEGENERACY AND PRESERVATION OF THE TEETH."

DEAR SIR,—I beg to thank you for the review in your last issue, and to add a few words anent the syllogistic "criticism" which the sentences quoted not unfairly incur. My reviewer rightly says "the third proposition is at fault;" but at whose door does the fault lie? Had I affirmed that "vegetarians shew no tartar," any of my readers, by an examination of the oral condition of the vegetarians within the circle of their acquaintance, might probably at once have disproved such an assertion. "Perfect health" and "healthy" are not convertible terms. Vegetarians do not necessarily enjoy "perfect health" any more than they are exempt from predisposition to disease. Moreover, many of them, previous to the adoption of vegetarian principles, suffered more or less constitutional injury from wrong dietetic habits, and from medical errors. The last sentence quoted in the review would, therefore, be more complete if it stated what, in fact, it implies—viz., that vegetarians who are constitutionally "healthy" shew no tartar, whilst flesh eaters do; or, in other words, that, *cæteris paribus*, a vegetarian will be free from tartar, and a flesh eater (unless limiting himself to a very small quantity) will not. What I think is implied (following my friendly reviewer) may be thus stated:—

Persons in perfect health are free from tartar.

Vegetarians (constitutionally healthy) shew no tartar, but flesh eaters (equally healthy) do.

Therefore tartar is mainly caused by dietetic errors, especially flesh-eating.

Since, I may add, dietetic errors are the chief causes of that acid state of the blood which befriends gouty pains, rheumatic arthrites, and the lesser associated evil, the deposit of tartar.

It is true, as intimated, that I am not a flesh-eater, and I largely attribute my recovery from a terrible illness—as also my present state of health, to the adoption of vegetarian principles, which can hardly receive more flattering advocacy than from the correct statement of my reviewer's syllogism:

Persons in perfect health are free from tartar.

Vegetarians of sound constitution shew no tartar.

Therefore—*Vegetarians are in perfect health!*

Yours faithfully,

Preston, Dec. 7th, 1877.

EDWIN COX.

[Logical obliquity is equally apparent in this letter as in the quotations we made from Mr. Cox' book. Let Mr. Cox establish propositions from our quotations as he pleases, and he will not free himself from the truthfulness of our remarks.—ED. M.R.D.S.].

A Distinction with a Difference.

TO THE EDITOR OF "THE MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—Will you permit me to claim the privilege of taking exception to your report of my remarks in relation to the use of arsenic. You make me to say that I had devitalized a pulp with arsenic, and then applied a filling, which filling had subsequently to be removed. What I did say was this—A case presented itself in which a tooth had been treated with arsenic, *but not by me*, and stopped without extirpating the pulp; after removing the filling and as much of the dead pulp as possible, I then applied Mr. Coles' preparation of pepsin to the canals, and was enabled to make a satisfactory filling, and I may add that since my remarks were made I have again seen my patient, and was greatly gratified to find that the tooth and surrounding gum were perfectly healthy and free from pain.

Yours &c.,

F. J. VANDER PANT.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of Messrs. SMITH, ELDER, & Co., 15, Waterloo Place, Pall Mall. All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4, Crane Court, Fleet Street, E.C.



